Competition in the Health Care Sector: Ten Years Later

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Edited by Warren Greenberg

Duke University Press
Durham and London 1988

The text of this book was originally published, in slightly different form and without the present index, as a "Special Section" within Volume 13, Number 2 of the *Journal of Health Politics, Policy and Law*.

Printed in the United States of America
on acid-free paper ∞

Library of Congress Cataloging-in-Publication Data
Competition in the health care sector: ten years later / edited by Warren Greenberg.
p. cm.
Bibliography: p.
Includes index.
ISBN 0-8223-0893-2
1. Medical economics—United States. 2. Competition—United States. I. Greenberg, Warren, 1943– .
RA410.53.C6524 1988
338.4′73621′0973—dc19 88-21920

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Introduction

Warren Greenberg

In June 1977, the Federal Trade Commission sponsored a major conference on "Competition in the Health Care Sector: Past, Present, and Future." The ten main papers presented and the remarks of the twelve discussants were published in 1978 and have been widely quoted in the health economics literature. I believe that the papers in that volume laid some of the theoretical groundwork for the tremendous changes in the health care sector since 1977. For the present volume, which originated as a special issue of the *Journal of Health Politics, Policy and Law*, ten of the original authors who were responsible for seven of the 1977 papers agreed to re-examine the state of competition in their respective areas. In addition, Christine Bishop has provided a paper on the nursing home industry, which has been the fastest-growing segment of the health care sector in the last decade. None of these papers attempts to prove whether competition in the health care sector worked or did not work. Rather, they retrospectively examine the authors' original ideas and hypotheses, which have been tested over the last decade.

In 1977, health care expenditures were $170 billion and represented 9 percent of the gross national product. At the beginning of 1987, health care expenditures had risen to $458 billion, or 10.9 percent of the gross national product. In 1977, there were 165 health maintenance organizations (HMOs) with a total enrollment of 6.3 million individuals; in 1987, there were 654 HMOs with a total enrollment of 27.7 million individuals. In 1977, the Federal Trade Commission had yet to win its landmark antitrust case against the American Medical Association, which provided the impetus for the formation of preferred provider organizations (PPOs) and selective contracting plans. One of the most dramatic changes has occurred in the insurance industry. In 1977, insurers paid the costs of the provider regardless of price or quantity of services delivered. Today, utilization review efforts, managed care plans, HMOs, and PPOs appear to be more common than the passive insurers of the past.

It appears that competition has increased substantially among providers and among insurers and health plans since 1977, perhaps more than anyone predicted or thought possible. Economic theory would suggest that this increase in competition should have resulted in a more efficient allocation of health care services. The distribution of health care services is still markedly unequal, however. At least 37 million individuals are without health insurance (versus 27 million in 1977), and it appears to be increasingly difficult for someone who is chronically ill to obtain individual health insurance. As in other sectors of the economy, it is clear in the health care sector that a more efficient allocation of resources alone can never solve an equity concern.

The increase in competition has also been unsuccessful in containing health care costs. The rate of increase in health care costs continues to exceed the rate of increase in all consumer or producer prices. This is not surprising. An improved allocation of resources may result in a one-time reduction in health care costs, but competitive industries are at least as prone as monopolistic industries to experience increases in costs over time. In addition, the increased development and diffusion of higher-cost health care technology appears to be immune to market structure considerations.

The authors in this volume are divided on the extent to which additional competition can be squeezed out of the system and the extent to which the spread of technology may be responsible for rising health care costs. For example, papers by Mark Pauly and by Roger Feldman and Frank Sloan suggest that increasing the information disseminated by providers or others may make the health care market more efficient. H. E. Frech and Paul Ginsburg, who take note of a much more competitive insurance marketplace, observe that the reduction in marginal income tax rates should make employer-paid health care premiums less attractive relative to income, which should put downward pressure on the scope of insurance coverage and less pressure on costs. Alain Enthoven, in the most policy-oriented article in the volume, suggests that a system of "managed competition" may improve efficiency as well as equity. Joseph Newhouse as well as Lawrence Goldberg and myself put more emphasis on the idea that the increase in new technology, not lack of competition, is driving health care costs up. Stuart Altman and Marc Rodwin are also not sanguine about controlling costs in the future under our current system of "halfway" markets, suggesting that neither the promotion of increased competition nor the vestiges of conventional government regulation can succeed in controlling medical care spending. And Christine Bishop believes that the long-term care industry (or more specifically, the nursing home component of that industry) has been and is still operating inefficiently; she suggests that improving information, reducing barriers on supply, changing Medicaid prices to better account for product differences, and increasing the number of private-pay consumers would improve the allocation of long-term care resources.

These papers suggest that competition in the various components of the health care sector has developed to a greater degree than most economists would have predicted ten years ago. Although paucity of information on price and quality is still a problem in many markets, Feldman and Sloan's description of the physician services industry and Frech and Ginsburg's description of the insurance industry are not unlike descriptions of most workably competitive industries in the economy today. Pauly makes this point as well, suggesting that the difference between the health care sector and other sectors of the economy has narrowed appreciably over the last decade. But competition may have succeeded only in improving the allocation of health care resources. In the next ten years, I believe, we will have

to combine a better allocation of resources with a more equitable distribution of these resources. It will be no mean task.

Now, let the papers speak, whisper, or even shout for themselves.[1]

1. With reference to George Stigler, *The Theory of Price*, rev. ed. (New York: Macmillan, 1952), p. v.

Is Medical Care Different? Old Questions, New Answers

Mark V. Pauly

Abstract. This paper examines whether changes in medical markets may be making them more like other markets. The emergence of HMOs and other managed care systems appears to have increased the consumer's potential ability to make better comparative judgments about the price and quality of medical care, and also seems to have made medical care more like other goods. However, the evidence that medical care is a "reputation good" suggests that it is, in this respect, different from other goods. Finally, the social concerns about medical care use necessarily make medical care different.

In answering this rhetorical question a decade ago (Pauly 1978), I tried to distinguish between three kinds of medical care "situations": those for which economic analysis works reasonably well; those for which analysis does not work well; and those for which, under a new competitive framework, analysis might work. Parallel with the question of whether positive economic analysis might explain behavior was the normative question of whether "competition" in some inchoate form might also be feasible and be able to achieve a fair degree of economic efficiency in the various types of medical markets.

My view is that we now have a much clearer understanding of the applicability of economic analysis to different kinds of medical markets, especially to markets for the "potentially competitive" type of service. In contrast to my earlier view, I think both institutional change and the development of new methods of analysis have gone a long way toward filling in the gaps in our ability to apply analysis to medical markets. There is still a good deal left to be learned, but I believe that much of the question of the form and feasibility of competition has been answered. The critical normative question of whether competition can or does produce an efficient outcome also has answers that are surer than they used to be, although there is still considerable room for answering the question posed above with "maybe."

Types of services

In my previous work, my main point of departure was to distinguish these three types of medical services and consider the possibilities for positive and normative

analysis of each. Those types were characterized by the frequency of their purchase, the knowledge the typical consumer had about the value of the service in general, and the appropriateness of the service for the consumer's particular problem. The intrinsic characteristic that separated the three types was how much the consumer knew relative to what the seller/provider knew or could know. "Testing" or trying out some medical services (e.g., a hernia repair) was fairly costly. I was beginning to describe what Mark Satterthwaite and I (1981) later called "reputation goods" (or, as I described them ten years ago, goods whose quality is judged by the experience of the consumer's friends). The point we made then was that there are three types of medical services: those that the consumer consumes frequently enough to be able to judge quality and know price (e.g., pediatric office visits for preschoolers); those that the consumer buys infrequently but the provider furnishes commonly, for which a reputation in principle can develop (perfect reputation goods); and those that are rare for everyone and for which, even in the best of circumstances, reputations or track records will be hard to determine (imperfect reputation goods). Indeed, the market for medical care is almost as much a market for information as it is a market for specific services.

I stand by my earlier conjecture that as much as one-fourth of medical care spending occurs in markets when purchases are consumer-initiated and repetitive and when experience is tolerably good. What I think is new is our understanding of what affects the remaining three-fourths of the spending. Here I will comment on four different influences: the development and testing of a theory of reputation as a constraint on or a substitute for demand creation by physicians; developments in the market for health maintenance organizations (HMOs) and other forms of managed care and the attendant reputation effects; the emergence of a market in information on quality and outcomes; and peculiarities in insurance markets.

Reputation, demand creation, and the market for medical care

Once the consumer has initiated a process of formal medical care and begins to obtain information from providers, there will be an opportunity for providers to alter the content of that advice so as to offset the demand for future services. This phenomenon probably characterizes other kinds of repair services and professional services as well; indeed, it is present to some degree in the advertising or selling efforts which accompany most products. In this sense, if medical care differs from other goods, it is in the relative importance of seller-provided information compared to information gleaned from observing ("searching") the product or experience with the product.

Further development of the theory of reputation goods has indicated that such markets work somewhat differently than the homogeneous good, full information model of competitive equilibrium. In particular, an increase in the number of sellers of reputation goods can lead to an increase in prices. The empirical evi-

dence that Satterthwaite and I examined indicated that this theory did indeed hold in the case of primary care physician services, which were sufficiently subject to out-of-pocket payments to furnish some market effects on pricing. The more recent study by Cromwell and Mitchell (1986) of the pricing of surgical services failed (perhaps not surprisingly) to find similar effects. When there is virtually complete insurance coverage, prices are set by the details of that coverage rather than by the market for care itself.

We also have a clearer theoretical understanding of the limits that a bad reputation can set on the demand creation for reputation goods. Dranove (1983) has developed models which show that demand creation is limited by the negative responses of customers to inaccurate or inappropriate information given by providers. However, we still have no clear empirical understanding of the potential extent of demand creation. There is no doubt that providers *could* create demand for medical services to a greater extent than would be possible for many other goods. What is not known is whether they will choose to do so, especially in response to changed economic incentives associated with insurer benefit levels and changes in the number of sellers. Nor is it known how much the "tolerably good" services may also be affected by information imperfections. I fear that some part of that marketlike one-fourth of medical care spending may not be so marketlike after all.

For many reasons it is likely that we will never fully resolve the demand creation/information imperfection question. More information will usually (though not always) be better, and other factors (such as the number of sellers and insurer-set price levels) will continue to have potentially perverse effects in the absence of full information. For instance, current proposals to reduce the price of "noncognitive" physician services (such as surgery) could well lead to an *increase* in the volume of such procedures in a demand creation model. Thus the fee-for-service market will remain a mystery as far as specific empirical predictions are concerned. But at least we now have a better understanding of why the theoretical ambiguity exists and why it is difficult to resolve empirically.

Developments in managed care

Recent real-world developments in the medical market may show a way out of this impasse (although it may only lead to a different impasse). What I have in mind is the development of various "preferred" and managed care systems, including most HMOs (except some of the independent practice association variety), preferred provider organizations (PPOs), and other systems which manage care in part by measuring the behavior of particular providers. While most of the discussion of (and propaganda for) these systems emphasizes the differences between their provider incentives and those of the fee-for-service system, I believe that this distinction is overdone and that it possibly ignores the more fundamental monitoring and measurement advantages that such systems may have.

In particular, such systems almost by definition encourage the potential purchaser to consider information about the relative frequency of good and bad outcomes—that is, to define quality by outcome. Whether potential HMO enrollees actually do make choices on this basis is not known. There is evidence that HMO members are aware of the limitation on their choice of provider that is embodied in plan membership, but in HMOs (as in other settings) the formal evaluation of quality is only beginning. Nevertheless, it is likely that quality concerns will come to the fore, and it is useful to envision what medical markets would be like when and if such quality concerns do become important.

Part of the motivation for seeking information about quality comes from the practice many HMOs have of using multiple physicians. If a consumer knows he will not have a personal physician (about whose competence he might be able to guess based on the last office visit), he will be eager to obtain information on the track record of the HMO's physicians as a group. And because of the large size of the HMO, the reliability of that information for making judgments will be greater than it could be for any individual fee-for-service physician. As employers become more aggressive proxy shoppers for their employees and as they gather quality and outcome data, purchasers will probably be able to evaluate HMO quality.

In addition, many consumers have been alerted to the "good news/bad news" character of HMO incentives. HMO doctors are not rewarded for unnecessary hospitalization or other use, but they and their firm may gain financially from limiting services. The consumer who sees through the financial incentives in most HMOs may have a legitimate fear of undertreatment, and may seek information to provide evidence that this is not occurring in the HMO he selects.

Finally, the HMO itself has a greater ability to generate and provide reliable information on outcomes than do solo fee-for-service practitioners, since the HMO usually compiles large amounts of internal data for its management and has a marketing obligation to represent itself as being of high quality.

Together, these three factors—need, fear, and opportunity—mean that the ability of the consumer to develop information on the total cost (not just unit cost), outcomes, and quality of the kinds of health care services that represent perfect reputation goods has almost surely improved. Perfection of information will never be achieved—one reason is that perfect information would require prospective HMO enrollees to know the likely outcome for every type of medical event that might occur during the coverage period.[1] However, the information available has certainly improved.

Markets in information

Concomitant with the development of information about HMOs and other managed care arrangements, conventional insurers have shown increased interest in

1. In this sense, the HMO buyer has a larger need for information than the fee-for-service purchaser, who needs only to gather information on those illnesses which actually do develop.

generating their own data on outcomes and use for the claims information they collect. In my original paper, I pinpointed insurers as the most obvious low-cost source of data on these items, but noted that up to that point, timidity and lack of motivation had prevented such efforts from being pursued. At present, there is much discussion of the use of third-party payer data to provide indicators of quality, outcome, or practice style for individual providers, but the only widespread publication of such information has been in the form of Medicare mortality data from a study not intended for public release. Insurers and managed care systems are using such information for internal management purposes, but the major provider of generally available data has been governmental (usually state) data disclosure systems. Since I would judge both the utility and acceptability of insurer-furnished data to be much greater now than it was ten years ago, the failure of such insurer-provided data to become widely available remains puzzling. Judging from the Medicare experience, one reason may be the possibility that information will not be perfectly accurate and the alleged difficulty consumers have in interpreting imperfect data. Another reason may be the "hostility" providers have toward intentionally invidious comparisons.

The development of publicly provided data, the contemporaneous upsurge of interest among professional associations (e.g., the Joint Commission on Accreditation of Hospitals, the American Board of Internal Medicine) in providing outcome-based performance measures, and the emergence of an industry furnishing measures of severity, outcome, and quality are all reasons to suspect that the medical market is on the verge of remedying much of its information deficit.

I hasten to add that this is not the same thing as saying that conclusive information currently exists. What is being suggested here is an improvement on what existed in the past, not a perfection that can never be achieved. As I noted in my earlier paper, not all of the deficit can be remedied, since much of the ignorance about causes and cures is shared by consumers and providers. Nor does anyone expect every consumer to become a medical expert. However, it is clear that information is becoming more available, and that "proxy shoppers" for consumers are emerging to provide the service of digesting and using this information. PPOs, case managers, and employer assistance in prudent purchasing can all be used to provide consumers with the benefits of more information at low subjective cost.

If this movement succeeds, this market may more closely approximate (even in the "rare service" case) both conventional markets and the ideal of perfect competition. However, there are four potential difficulties with this emerging trend that deserve comment.

The first difficulty arises from the heterogeneity of consumers—a heterogeneity that implies that no single standard of care, method of provision, or protocol can be right for everyone. It is therefore inappropriate, and probably harmful, to try to develop a single "Grade A" measure of quality. There is a rationale for setting minimum standards and for limiting access to the market for types of care which no well-informed person would seek, but there is always a danger

that minimum standards will become a tool to limit competition. Paradoxically, although the greater availability to consumers and buyers of measures of outcomes ought to make minimum standards *less* necessary, those measures can also become a tool for further limitation. Here again, there is no change from a fact I noted a decade ago—we hardly have any better idea now than we did then of the degree of heterogeneity of consumer preferences.

The second problem is that the availability of measures of outcomes and quality combined with cost or price information compel consideration of a question many in this market would wish to avoid—the occasional necessity of trading off cost and quality. As Schwartz (1987) has strongly argued, there are some situations in which better outcomes can only be produced by applying more inputs. The cheapest hospital in town may not be the worst, but it is unlikely to be the best; to get better care one would need to pay more.

With the availability of information on cost and quality, the necessity to trade one for the other comes into embarrassing conflict with the rhetoric (shared by benefits managers, HMO marketers, insurers, and politicians alike) that the goal is "the highest possible quality for all." There will be understandable reluctance to publicize decisions to sacrifice quality for cost. The discourse that permits rational discussion of such tradeoffs remains underdeveloped.

The most important advantage to an employee or PPO of an "official" quality measurement system may not be the "truth" of the measurement, but rather the fact that such measures protect a low-cost option from the charge that it is also of low quality. The incentives may then not be to generate a sensitive measure of quality, but instead to target a few bad apples and declare the remainder equally good. Such a situation could correspond with reality, but one should be aware of the incentive to represent the situation in this less threatening fashion, regardless of reality.

The third potential difficulty with new cost/quality information is that when combined with increased political pressure to control outlays on public insurance, it may spotlight the difference in the quality of care that can be bought with what moderately well-to-do privately insured consumers will spend and the quality that can be bought with what Medicare and Medicaid are willing to spend. Providing the evidence that two-class medicine has arrived despite the years of platitudes may result in criticism of the messenger rather than criticism of the message.

Finally, there is the question of how accurate information must be before it can be useful. That the actual provision of fully accurate information is rare is indicated by a program recently introduced in Florida by the Ryder System that provides some limited information to employees on physician fees and credentials (Ricks 1987). The information the plan furnishes is much like the information provided by the various "shoppers' guides" that were developed by consumer organizations about a decade ago. We do not know whether that information made much difference then, or whether Ryder employees will benefit now. However, it is instructive that Ryder did *not* provide the useful information on outcomes

it could have pulled from its own insurance data; instead it relied on the "incomplete indicator" of board certification and medical school attended.

The Ryder program bills itself as indicating that "as quality goes up, cost goes down." It actually does nothing of the sort; it only shows that foreign-trained physicians charge more (not that they actually collect more) than American-trained physicians, and it offers no evidence that training is related to outcome. This raises the broader question of whether incomplete information such as Medicare's mortality data or Ryder's fee data is better than no information at all.

It is not difficult to imagine how incomplete information—even when it is correct information—can make consumers worse off. Suppose 20 percent of the physicians in an area are superior in terms of intrinsic quality, 20 percent are inferior, and 60 percent are of average quality. If consumers are completely ignorant and so distribute themselves randomly among all providers, the chance of selecting a low-quality physician is 0.2. Now suppose that low quality is accompanied by a lower price, but a price not low enough to "justify" the lower quality. In that situation, providing information on price might increase the probability of use of low-quality physicians.

As this example illustrates, the critical question is whether incomplete information leads to choices correlated with the remaining errors. Only empirical analysis can tell, but given an assumption of independence, *some* information (even if it is incomplete) may at best be worthwhile and at worst do no harm (on average). To take the worst case, suppose that poor quality is not at all correlated with good outcomes. Then observing a better outcome in one hospital than in another will be consistent with an expected outcome that is no different at the two hospitals. But if observed outcome is thought to have any chance of being correlated with expected outcome, then there is some potential advantage to choosing the hospital with the better observed outcome. Of course, if the quality is truly no different (on average) in such hospitals and the difference in outcome only reflects unobserved severity differences, then such choices will not do any good—but they will not do any harm either (on average). Imperfect information will not be "fair" to those good-quality hospitals that happen to have severer-than-average case mixes, but competition is not necessarily fair. At best, it is fair only on average.

Making choices this way could be harmful, however, if truly bad quality is associated with *less* severe case mix. We obviously cannot rule out this possibility on a priori grounds, and more investigation of the correlation between quality and more refined measures of severity would shed light on the matter. A recent study (Dubois et al. 1987) of the relationship between medically defined quality in hospitals and bad outcomes found that on average, the poorer-quality hospitals had more severe case mixes.

There has also been a start in investigating the relationship between price levels, quality levels, entry, and market equilibrium. Von der Schulenburg (1986) has developed an adaptation of the Klein-Leffler reputation model for physician

services under the assumption that consumers are ignorant about both provider quality and any particular provider's production conditions, objectives, and time preference. One of his conclusions is that the greater the number of high-quality suppliers to begin with, the more likely a new supplier will opt for high quality. Beyond some critical threshold, only producing low quality is not the dominant strategy for new entrants, and regulation presumably becomes less necessary. He also shows that in markets where prices are set externally (e.g., as by the Health Care Financing Administration in the prospective payment system), the higher the price the higher the quality, and the easier entry is the higher quality is relative to price. These results parallel the airline competition models discussed by Joskow (1980) and by Held and Pauly (1983).

A more difficult case is equilibrium in markets where price is also market-determined. The most that one can get out of such models is that where quality is variable, competition can lead to high cost *and* high quality; an increase in cost can then be socially efficient. One might also note, however, that neither the fixed (exogenous) price model nor the endogenous price model will describe recent history in the U.S. hospital system, with its heavy reliance on cost-plus insurance. In a market with cost-plus incentives, competition need not produce outcomes which are in any way "good."

Peculiarities in insurance markets

While the market for information is emerging and while there are some questions about how well it is working (or can work), there are still some peculiarities in the market for medical insurance. The difficulty of objectively determining the amount of damage illness causes (or even of determining exactly what event occurred) results in insurance policies which make payments based on expense levels. The result of such policies is moral hazard.

This characteristic will, in my view, always make medical care different from other goods, although the form that difference takes may vary. Compared to a decade ago, a larger fraction of the population (now about 10 percent) has its medical care use restricted to what a health maintenance organization will furnish. Expenditure control is provided by the supply side rather than by demand-side limits like deductibles and copayments. We also know empirically that HMOs offer a wide variety of organizational structures that are intended to bring about this quantity limitation and a wide variety of levels of performance of care management. Much more so than in the past, the "buy your own regulator" market is a reality.

Recent developments in PPO and HMO arrangements are also pointing toward a new form of what is fundamentally a demand-side limit on expense. In all PPOs (and now in some HMOs) the individual receives partial benefits for out-of-plan use. One way to look at such policies is as indemnity policies similar to those in other forms of insurance, but with the determination of benefits being implicit

in the behavior of the plan rather than explicit in the contract. That is, it is the plan's policy of determining what it will approve as "necessary" that triggers full benefits, rather than the stipulations of a contract. There is always the option of resorting to the courts when the contract is ambiguous.

We seem to be moving toward arrangements in the private sector in which some people choose such implicit contracts while others retain conventional coverage. In the Medicare program, in contrast, there was a shift toward the prospective payment system, which pays what is in effect a per-inpatient admission indemnity but has strong limits on provider balance billing and patient supplementation.

Conclusion: Is treating medical care the same as other goods a good thing?

The strongest impression from reconsidering the question of whether medical care is different from other market goods is that medical care appears considerably less different, both in theory and in real-world institutional arrangements, than it did ten years ago. To put it bluntly, medical care is now more "commercial," and we are better off analyzing it as such.

But an important difference—perhaps the most important difference—remaining between medical care and other goods is the disquietude many people feel, or think they should feel, about this "commercialism." This disquietude probably reflects differences in the way people think about medical care. One attitude is thought to be a manifestation of the information imperfection discussed earlier: nonpoor people, knowing that they are imperfectly informed about quality, prefer not-for-profit firms because such firms are thought to be less willing to constrain quality in order to increase profits. Hansmann (1980) and Weisbrod (1977) have both advanced this theory. An implication of my earlier remarks is that improved consumer information may reduce the relative attractiveness of the not-for-profit firm, since the not-for-profit firm is most valuable when consumer information is imperfect. When (and if) hospital quality can be measured, one will have less to fear from the closely monitored for-profit hospital of the future than from its current unconstrained counterpart.

Another difference between medical care and some other goods is that medical care is an object of social concern. I care about my neighbor's consumption of medical care. There are other goods which are similar objects of concern—housing, nourishing food—and in all cases this concern evokes some type of goods-specific subsidy, both public and private. Indeed, it is the motive for private charity that is specifically directed toward my neighbor's use of medical care (rather than his general well-being) which motivates my donation to my community hospital. I choose a nonprofit producer in order to avoid having to gather information on whether or not my donations are used for their intended purpose.

What remains to be determined is whether medical care differs even from other "altruistic externality" goods. Is the object of our concern the attainment of an

adequate level of care use (even if it may be lower and achieve a lower level of health and well-being than what the well-to-do achieve), or is it equality in use and/or outcome? The President's Commission (1983) and I (1970) took the first view, but Thurow (1984) and Lindsay (1969) emphasized the second.

The emergence of explicit two-class medicine, aided by a market which more efficiently caters to diversity and is less willing to tolerate the earlier pattern of private cross-subsidies with other patients' money, may force taxpayers to confront the ticklish question of how much they are really willing to buy for their neighbor compared to what they would buy for themselves. Politicians may be successful in pushing this question—which has just emerged from under the provider cross-subsidy rock—under the rug of mandated employer benefits, leading to probably the first politically attractive head tax. But the determination of whether medical care really is different is ultimately a political question.

References

Cromwell, J., and J. Mitchell. 1986. Physician-Induced Demand for Surgery. *Journal of Health Economics* 5: 293–314.

Dranove, D. 1983. An Economic Model of the Physician-Patient Relationship. Doctoral dissertation, Stanford University.

Dubois, R., et al. 1987. Hospital Inpatient Mortality: Is It a Predictor of Quality? *New England Journal of Medicine* 317: 1674–80.

Hansmann, H. 1980. The Role of Nonprofit Enterprise. *Yale Law Journal* 89: 835–901.

Held, P., and M. Pauly. 1983. Competition and Efficiency in the End Stage Renal Disease Program. *Journal of Health Economics* 2: 95–118.

Joskow, P. 1980. The Effect of Competition and Regulation on Hospital Bed Supply and the Reservation Quality of the Hospital. *Bell Journal of Economics* 11.

Lindsay, C. 1969. Medical Care and the Economics of Sharing. *Economica* 36: 351–62.

Pauly, M. 1970. *Medical Care at Public Expense*. New York: Praeger.

———. 1978. Is Medical Care Different? In *Competition in the Health Care Sector: Past, Present and Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

Pauly, M., and M. Satterthwaite. 1981. The Pricing of Primary Care Physicians' Services. *Bell Journal of Economics* 12: 488–506.

President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. 1983. *Securing Access to Health Care: A Report on the Ethical Implications of Differences in the Availability of Health Services. Volume I: Report*. Washington, DC: U.S. Government Printing Office.

Ricks, T. 1987. New Corporate Program Lets Employees Compare Local Doctors' Fees and Training. *The Wall Street Journal*, 4 August, p. 37.

Schwartz, W. 1987. The Inevitable Failure of Current Cost-Containment Strategies. *Journal of the American Medical Association* 257: 220–24.

Thurow, L. 1984. Learning to Say "No." *New England Journal of Medicine* 311: 1569–72.

von der Schulenberg, J.-Matthias Graf. 1986. Regulatory Measures to Enforce Quality Production of Self-Employed Professionals. In *Law and Economics and the Economics of Legal Regulation,* ed. J.-Matthias Graf von der Schulenberg and Goran Skogh. Dordrecht, The Netherlands: Kluwer Academic.

Weisbrod, B. 1977. *The Voluntary Non-Profit Sector*. Lexington, MA: D. C. Heath.

Competition among Physicians, Revisited

Roger Feldman and Frank Sloan

Abstract. Ten years ago we developed a model of demand inducement in the physician services market and explored the properties of that model. We found that predictions concerning physicians' prices, workloads, and income were ambiguous and in many cases were consistent with those derived from a standard monopoly pricing model. Spurred in part by our work, numerous empirical studies of the demand inducement model have been conducted. These studies found little evidence of demand inducement for primary care physician services. Demand inducement may exist in the market for surgical services, but its extent is less than previously estimated. We disagree with those who say that physicians generate demand to avoid price controls and that national health care spending is proportional to the number of physicians; the evidence does not support these arguments. Substantial uncertainty may surround the physician's choice of diagnosis and treatment mode. However, this does not imply a breakdown of the agency relationship. In this paper we extend our earlier model of demand inducement to include variations in the quantity of services (which was previously assumed to be less than socially ideal). Using the model, we conclude that the major objection to government price setting is not that physicians will get around the controls by inducing demand; rather, price controls result in a quantity and quality of physicians' services that is not ideal and may be inferior to those provided in an unregulated monopoly.

Ten years ago, following Robert Evans, we classified health economists into two groups—Ns (narrow economists) and Bs (broad economists).[1] The key issue dividing these groups was whether the demand curve for physician services is subject to shifts induced by physicians in pursuit of their own interests: the Ns argued that it was not and the Bs argued that it was. The issue is important to the analysis of competition in the health care industry. If doctors can generate demand for their care, they possess far more market power than is usually attributed to the monopolist, whose price-setting ability is constrained by a fixed demand curve.

This argument is still raging; indeed, the volume of papers published on physician-induced demand seems to be growing at an increasing rate. Interestingly, few of the participants in the debate show any sign of changing their positions.

1. All references to our earlier paper are to Sloan and Feldman (1978).

Uwe Reinhardt, one of the leading Bs, suggests a particularly simple test of the inducement hypothesis: "Indeed, the present author has never yet met a physician who would deny the existence of that power (nor has he ever met one who would admit to exploiting it for personal gain)" (Reinhardt 1985: 189). Aside from their lack of methodological rigor, such simple views are contradicted by other "stylized" facts—organized medicine's traditional opposition to increased physician supply, the movement of physicians to towns previously not served by physicians (Newhouse et al. 1982), and recent "handwringing" by physicians in the face of both increased competition from competitive health plans and the greater aggregate number of U.S. physicians. The issue is not whether physicians have ever induced consumers to purchase a service that they would not have purchased had they been fully informed; rather, it is whether such added care is quantitatively important and whether the amount of induced demand varies systematically with changes in such variables as physician supply.

To make such assessments, it is essential that other influences on demand be held constant. Sophisticated econometric studies can be found to support both sides of the argument. One can look to the work of McCarthy (1985), who found that the market for primary care physician services in large SMSAs is reasonably competitive, and Cromwell and Mitchell (1986), whose findings on the market for surgery "provide definite support for the notion of competitive market failure—particularly in large metropolitan areas" (ibid.: 293).

This debate will not be resolved easily or soon. Therefore, it is appropriate to take stock of the inducement argument and other issues related to competition among physicians. In this paper we summarize recent empirical studies of physician-induced demand. In addition, we evaluate evidence that per capita utilization of services tends to rise when fees are controlled or when the physician/population ratio increases. Finally, we take note of studies that show large differences in utilization of physicians' services among small geographic areas.

Lest we be accused of hidden bias, we both admit to membership in the N camp. This was true ten years ago and is still true today. However, this does not mean that we reject further improvements in the theoretical framework we created ten years ago or in empirical studies of supplier-induced demand. In fact, we will expand the theory of inducement to include variations in the quantity of physicians' services. Both positive and normative aspects of this model will be considered simultaneously. In a sense, the model extends work started in our earlier paper. We conclude that the major objection to government price setting (by a fee schedule or a "physician DRG" system) is not that physicians will get around the controls by inducing demand, but that price controls result in a quantity and quality of physicians' services that are not ideal and that may be inferior to those provided in an unregulated monopoly.

Econometric studies of demand inducement

Ten years ago we developed a model of demand inducement in the physician services market and explored the properties of that model. We found that pre-

dictions concerning physician prices, workloads, and income were ambiguous and in many cases consistent with those derived from a "standard" monopoly pricing model. Spurred in part by our work, numerous econometric studies of demand inducement have been conducted in the past decade.

Direct tests of the inducement hypothesis. Suppose there is a change in the level of some variable (e.g., physicians per capita in the market area) that shifts the demand curve facing an individual physician. Standard theory (in the form which recognizes quality differences among physicians) predicts that such shifts will not affect per capita demand for physicians' services directly once the indirect effects operating through money and time prices have been controlled. Inducement theory is ambiguous, but it is usually assumed that an increase in doctors per capita (an inward demand shift) will cause physicians to induce demand. This is the most straightforward test of the inducement hypothesis, since any nonzero partial derivative of the physician/population ratio in the demand equation (once prices have been held constant) is inconsistent with standard theory.

Econometric studies using aggregate data generally support the direct inducement hypothesis. Two examples are found in Fuchs (1978) and Cromwell and Mitchell (1986). Fuchs examined the effects of the supply of surgeons on the demand for surgical operations in 22 geographic areas of the United States in 1963 and 1970. He argued that surgery was well suited for empirical analysis of inducement since the "time price" is relatively unimportant to surgical patients—that is, increased numbers of surgeons may reduce patient travel time and waiting time for surgical care. But travel time is generally a minor consideration relative to the financial price of surgical care, and waiting time for surgical services, at least in the United States, has typically been low. Fuchs found that a 10 percent increase in the surgeon/population ratio results in about a 3 percent increase in per capita utilization. Cromwell and Mitchell estimated a model of demand and equilibrium fees for surgery with data from about 250 SMSAs (or collections of rural counties) from 1969 to 1976. Other things equal, utilization was higher in surgeon-rich areas, although the estimated demand-shift elasticity was about one-third of that found by Fuchs.

Both the Fuchs and the Cromwell/Mitchell studies used an instrumental variable approach in which the physician/population ration was endogenous. The most severe critics of this approach are Auster and Oaxaca (1981), who point out that the underlying model being tested is

$$Q^d = D(P, X^d, Q^s), \tag{1}$$

where Q^d is quantity demanded per capita, P is price, X^d is a vector of exogenous demand-shift variables, and Q^s is quantity supplied. This is in contrast to the standard model, which excludes quantity supplied from the demand equation:

$$Q^d = D(P, X^d). \tag{2}$$

The problem is that these two equations are indistinguishable in equilibrium, where $Q^d = Q^s$. For example, let equation (1) be linear:

$$Q^d = \alpha_1 P + \alpha_2 X^d + \alpha_3 Q^s. \tag{1a}$$

Using the equilibrium condition, equation (1a) can be written as

$$Q = (\alpha_1 / [1 - \alpha_3]) P + (\alpha_2 / [1 - \alpha_3]) X^d. \tag{3}$$

An estimate of equation (3) is indistinguishable from the standard model implied by equation (2).

To circumvent this problem, the Fuchs and Cromwell/Mitchell studies used an input from the supply side (surgeons per capita) to shift demand. However, inputs and outputs are likely to be strongly correlated. Thus the identification problem cannot be solved unless it can be shown that multiple inputs are used to produce output (a condition that is necessary to distinguish the supply of surgeons from the number of surgeries) and that the relative prices of these inputs differ across markets. The surgeon and his surgical assistant are clearly the dominant inputs in the production of surgical care. Little variation in factor price ratios could preclude efficient estimation of the market supply relationships.

Neither of the studies reviewed here addresses the question of how surgical operations are produced. Regarding the identification of market supply, Fuchs's model did not incorporate any factor prices pertinent to the production of surgical operations. Cromwell and Mitchell used a vector of cost and productivity-influencing variables, but this vector was limited to two variables: hospital beds per capita and the hourly retail wage (the latter was assumed to measure the wage of nonphysician inputs). Most of the variables explaining physician density were measures of professional amenities and measures of the area as a place to live. Not surprisingly, when the variable for estimated number of surgeons per capita was used in an equation to determine equilibrium fees, many of the estimated coefficients had implausible signs. For example, age-specific dummy variables indicated that price was inversely correlated with the age of the population, even though age was a positive demand-shift factor in the estimated utilization equations. The authors suggested that part of the problem was due to collinearity between the predicted surgeon supply and the included exogenous variables. This is exactly the problem that Auster and Oaxaca raised in their critique of the instrumental variable method.

In contrast to studies using aggregate data, those based on observations of individual physicians or consumers indicate little evidence of demand inducement. For example, Rossiter and Wilensky (1983) analyzed differences in the use of physicians' ambulatory care services and the extent to which these differences are attributable to the physician, the patient, or both. For services identified as physician-initiated, most of the variation was due to patient characteristics that

reflect medical need, such as disability days, perceived health status, and the presence of chronic health conditions. Variables related to the physician's financial interest, such as physician density, had very little effect on demand. In another study, Rossiter and Wilensky (1984) concluded that physician-initiated expenditures for ambulatory care and for all medical services could not readily be explained by the inducement hypothesis. When health insurance and other factors were held constant, the magnitude of physician inducement was very small and was statistically significant only for more discretionary procedures.

More recently, McCarthy (1985) estimated demand curves for individual primary care physicians in large SMSAs. From the demand regressions McCarthy found that consumers are very responsive to prices charged by individual physicians. The elasticity of demand with respect to physician density was very large in absolute value (between -2.61 and -3.64). This contrasts not only with demand inducement theory, which predicts that this elasticity should be less than 1 in absolute value, but also with standard theory, which predicts an elasticity of -1.[2] McCarthy suggested that these results are evidence of a binding demand constraint that, at the margin, limits the inducement activities of individual physicians. But with an elasticity of -3, an annual increase in doctor supply of 3 percent would lead to decreases in per doctor workloads of 9 percent per year—hardly a trivial decrease, especially when repeated annually.

Studies using microdata appear to sidestep Auster and Oaxaca's criticism, since it can be argued that physicians per capita are exogenous in equations explaining the behavior of individual consumers or physicians. However, this escape from the endogeneity problem is more apparent than real. Suppose, for example, that doctors per capita in the jth city ($MDCAP_j$) are a linear function of price (P_j), quality of life in that city (L_j), and an error term (u_j):

$$MDCAP_j = \beta_1 P_j + \beta_2 L_j + u_j. \tag{4}$$

Let average quantity demanded per doctor depend on price and physician density (this is the equation estimated in studies using aggregate data):

$$Q_j^d = \alpha_1 P_j + \alpha_2 MDCAP_j + \epsilon_j. \tag{5}$$

Suppose, further, that quantity demanded from the ith physician in this city depends on the deviation between that physician's price and the average price:

$$\begin{aligned} Q_{ij}^d &= Q_j^d + \alpha_1(P_{ij} - P_j) + \epsilon_{ij} \\ &= \alpha_1 P_{ij} + \alpha_2 MDCAP_j + v_j, \end{aligned} \tag{6}$$

2. In standard theory, when price and demand shift variables are held constant, a 1 percent increase in physicians per capita should reduce the services demanded from each physician by 1 percent, assuming that quality does not change.

where $v_j = \epsilon_j + \epsilon_{ij}$. This is the equation estimated by McCarthy, with $MDCAP_j$ assumed to be exogenous.

However, the model also has an equilibrium condition that demand equals supply. The simplest possible supply assumption is that supply per doctor in the market area is fixed at $\bar{Q}_j$. Thus the equilibrium condition is $Q_j^d = \bar{Q}_j$. Using this condition and equations (4) and (5), we can solve for doctors per capita as a function of exogenous variables and the city-specific error term:

$$MDCAP_j = \ldots\ldots - (\beta_1 / [\alpha_1 + \alpha_2\beta_1])\epsilon_j. \tag{7}$$

The last term is positive, indicating that stronger unmeasured community demand conditions lead to stronger demand per doctor and more doctors per capita. As a consequence, the estimated coefficient on the physicians per capita variable in McCarthy's equation (6) is biased toward 0. Therefore, it is surprising that the absolute value of his estimated coefficient is as large as 2 or 3, let alone the value of 1 predicted by standard theory.

Our suggestion for future studies of demand inducement is that physicians per capita cannot be regarded as exogenous, even in studies that use microdata. One way to solve this problem is to use an instrumental variable for $MDCAP_j$, but this throws us back on Auster and Oaxaca's criticism. An easier correction is to use a fixed-effects model in which influences of unspecified pertinent community characteristics are captured by binary explanatory variables for each community. This would have been especially suited to McCarthy's data, which came from a few large cities. The addition of city-specific dummy variables as proxies for the ϵ_j errors would have left physicians per capita uncorrelated with ϵ_{ij}, and thus equation (6) could have been estimated with observed physician supply on the right-hand side.

Physician prices and consumer information. Standard theory predicts that the price of physician services (or, in more sophisticated versions of standard theory, the "quality-adjusted" price) should fall following an increase in the number of physicians per capita. Demand inducement theory, as we pointed out ten years ago, is ambiguous about this prediction, but it usually assumes that price rises as physicians attempt to recoup their lost demand. As we discussed in our earlier paper, some studies found a positive association between physician density and the average level of fees. But we also pointed out that these studies are flawed because they fail to control for one or more of the following variables: the mixture of services provided (complexity, amenity level, etc.), the effect of nonmonetary factors such as travel and waiting time, and the tendency of physicians to migrate to areas with higher fees.

The importance of the first variable is very simple to explain. Producers in large markets are more specialized than those in small markets—for example, highly specialized physicians tend to congregate in large metropolitan areas. It

is observed that these areas have high fees and more doctors per capita, but this association is due to the specialized services produced by urban physicians. Attempts to control for product differentiation, such as the distinction between "elective" and "nonelective" surgery used by Cromwell and Mitchell, only begin to capture the extent of endogenous specialization.

The second variable is more subtle. Patients in areas with more doctors should have easier access to physicians in terms of lower travel and waiting times. These nonmonetary factors will encourage them to use more services, which, other things equal, tends to increase the monetary price of services. Some evidence on this effect comes from a study by Feldman and Ballard (1981), who examined office waiting times in the British National Health Service. Feldman and Ballard found that areas with more doctors had significantly lower waiting times than areas with fewer doctors. Using this estimate, they calculated that the entire effect of physicians on demand for services observed in the United States (Fuchs and Kramer 1972) could be explained by easier access to medical care in areas with more doctors, without recourse to demand inducement.

The third variable will lead to higher fees in areas with more doctors per capita. However, it is important to note that the high fees cause doctors to enter the area, not (as inducement theory suggests) that more doctors cause higher fees.

The only serious theoretical attempt to explain the positive association between price and physician density outside the framework of the standard model was made by Pauly and Satterthwaite (1981), who argued that consumers have more difficulty finding information about a particular doctor in physician-rich areas. Consequently, monopoly power is enhanced, theoretically leading to higher prices in such areas. Cromwell and Mitchell found no support for this model, however. Phelps (1986) has also trenchantly criticized the search model implied by Pauly and Satterthwaite's approach to the market. Pauly and Satterthwaite assumed that the patient's search strategy is to select a doctor at random and then ask friends for information about the doctor. The quality of information obtained by this strategy clearly declines as the number of doctors increases. Phelps suggested that a more appropriate and realistic search strategy would be to ask one's friends (or those who have similar tastes for styles of treatment) for the name of their physicians. Under this search strategy, which is at least as plausible as the one specified by Pauly and Satterthwaite, physician density should not affect information-gathering costs.

The lasting contribution of Pauly and Satterthwaite's model may be to focus future studies on physician market power on the critical role played by information. In fact, Pauly (1978) had previously called for studies that would document whether consumers were well informed about medical care. In the same paper he emphasized that consumer information about frequently consumed physicians' services (such as primary care) is likely to be much better than information about infrequently consumed services (such as surgical operations). For some services, such as many forms of cancer therapy, there is considerable un-

certainty on the provider side about the proper course of treatment. Too many researchers—and policymakers, for that matter—have overlooked such important distinctions.

A few studies have been conducted on consumer information, both before and after the publication of Pauly's 1978 paper. For example, Bunker and Brown (1974) assessed the extent of excess surgery by comparing the rates of surgery performed on a group of Stanford University Medical School faculty and their spouses with those performed on a group of attorneys, Protestant ministers, and graduates of Stanford Business School and their spouses. Presumably, if physicians give self-serving advice, it should be detected more often and accepted less often by their peers. However, Bunker and Brown found that physician patients and their spouses had a 20–30 percent higher total rate of operations than the general population and a rate of "nonessential" procedures greater than the three professional control groups.

A similar conclusion was reached in a study by Hay and Leahy (1982), who found that medical professionals and their families were as likely, if not more likely, to visit physicians as were other families, controlling for variables related to perceived health status, access to care, and ability to pay.

If the present studies show that the general public is no more likely to be bamboozled by demand inducement than physicians are, then the goal of future research in this area should be to identify market structures that will produce accurate information. Some of the N economists believe that a competitive medical care system would produce more reliable information than the present one (Office of the President 1985). For example, only 29 percent of the participants in the RAND Health Insurance Experiment realized the falsity of the statement: "If you have to go to the hospital, your doctor can get you into any hospital you prefer" (Newhouse et al. 1981). When the same statement was presented to 5,000 employees in Minneapolis, where many employees have a choice among competing health maintenance organizations (HMOs), researchers found an appreciably higher percentage of correct answers (Dowd et al. 1984). This finding suggests that consumers in Minneapolis were aware that choosing a closed-group HMO limits one's ability to choose any hospital.

The target income hypothesis. An extreme form of the demand inducement model combines inducement with the assumption that physicians shift demand until they achieve a satisfactory, or "target," level of income. This model was examined by Sweeney (1982), who showed that more competitors can lead to higher prices (assuming, for the moment, that physicians do not induce demand) only if the demand curve cuts the downward-sloping supply curve at the doctor's chosen equilibrium point. Figure 1 displays two panels with identical demand curves. In the left-hand panel the "supply curve" (that is, all combinations of price and quantity that yield the target income) cuts the demand curve at points A and B. If the doctor chooses point A, then an increase in competitors (an inward

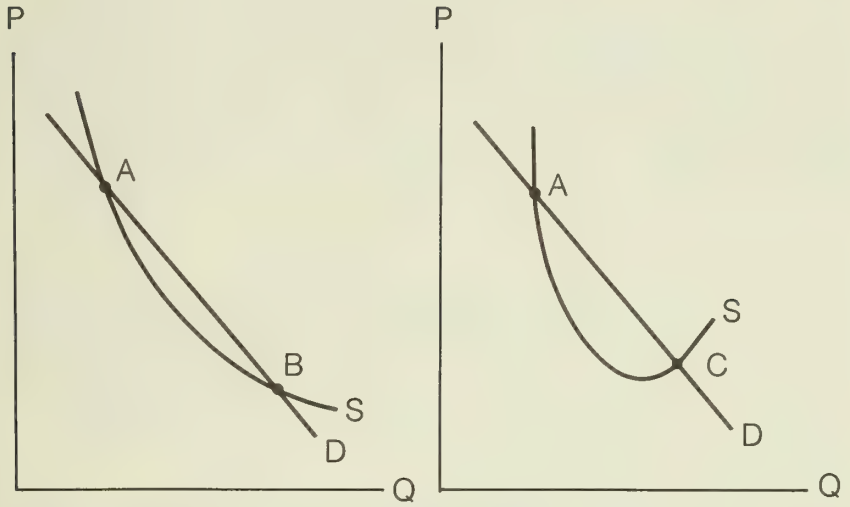

Figure 1. The Target Income Model Without Demand Inducement

shift in demand) will cause price to fall. Likewise, both points A and C in the right-hand panel are consistent with a negative correlation between physician density and price. Only at point B are predictions inconsistent with standard theory. Sweeney was relatively noncommittal regarding which of the possible equilibrium points will be chosen.

When inducement is added to the target income hypothesis, physicians will shift demand as much as they can in order to hit the target with the least possible work. Further exogenous increases in the number of doctors will result in lower prices, which is the standard result from a model without demand inducement. Alternatively, one can assume that demand shifting is constrained, at the margin, by monetary or psychic costs. But this assumption makes the model equivalent to Sloan and Feldman's analysis, which showed that price may rise or fall when the number of physicians increases. Thus the target income model is theoretically sterile: either it cannot be distinguished from the standard monopoly approach to physician pricing or it adds nothing to the monopoly model with inducement analyzed by Sloan and Feldman.

Sweeney (1982) suggested that the problems of interpreting supply or demand equations under conditions of target-income pricing and inducement can be avoided by directly estimating the physician's target income and the probability of hitting that target. He found that physicians hit the target more than half the time in only 9 of 30 markets, the majority of which were likely to be small and rural.

Interesting and novel as Sweeney's estimation approach and results are, they raise more questions than they answer. In particular, his empirical work seems

to lack any concept of long-run market equilibrium. If doctors cannot hit their target income even after shifting demand, why do they not move to another area? The only conceivable long-run equilibrium is at the tangency of supply and demand, which must occur on the downward-sloping portion of the supply curve. All changes in physicians per capita should then be viewed as endogenous responses to changes in the given conditions of supply and demand.

Responses to fee controls

The Bs have argued that fee controls are fruitless, since when price is constrained physicians can maintain their incomes by boosting demand and hence increasing the number of billable services. The Bs cite evidence from the United States and Canada to support this view. But as we will demonstrate, the evidence is ambiguous as to whether supplier-induced demand actually occurred. We will examine physician responses to fee controls from a conceptual standpoint below; here we look at the empirical evidence.

The Economic Stabilization Program (ESP), instituted by the Nixon administration and covering the period of August 1971 through April 1974, applied price controls to all sources of patient revenue to physicians. After a short price freeze, ESP allowed prices to rise but limited the annual increase to 2.5 percent. In addition, Medicare placed limits on the growth of reasonable charges.

In a comprehensive evaluation of bills submitted by California physicians to Medicare during ESP, Holahan and Scanlon (1978) found that while price controls succeeded in limiting the rise in actual and reasonable charges per unit of service, there was an appreciable increase in the number of services billed and in the complexity of services. As a consequence, payments to physicians in the California sample increased markedly during ESP.

One explanation for this behavior is that physicians stimulated demand to maintain their incomes. There are alternative explanations, however, several of which are consistent with standard economic models. First, as discussed below, imposing a binding price constraint on a seller with monopoly power may lead to increased output. Since demand for physicians' services increased during this period (Sloan and Schwartz 1983), price probably would have risen at more than the allowed rate of increase. Thus the controls probably kept price lower than it otherwise would have been.

Second, placing a limit on office visit fees encourages physicians to substitute diagnostic tests for their own time so long as the price of such tests covers marginal cost (Munch 1980). Such tests are often performed in the physician's office and are thus billed by the physician.

Third, ESP may have stimulated physicians to game the system by relabeling services provided—e.g., by reporting an "intermediate" visit to the payer rather than a "brief" one. Physicians can always do this, but before ESP, when fee increases were not controlled, it was less costly to raise prices than to spend time

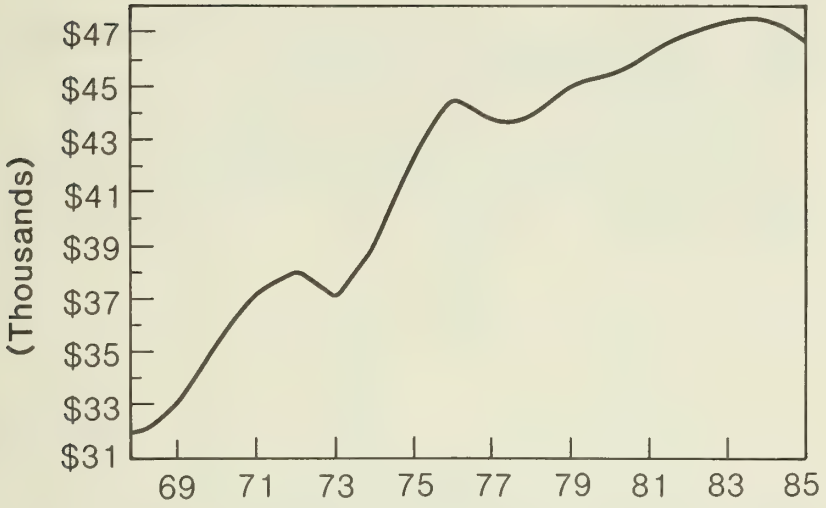

Figure 2. Billings per Physician in British Columbia, 1968–1985 (Constant 1971 Fee Dollars)

Source: Wilson v. Medical Services Commission of B.C., 9 B.C.L.R. 350 (1987), statement of evidence filed by Morris Barer and Robert Evans.

figuring out ways to outsmart insurers. ESP decreased the relative cost of gaming and thus may have encouraged such behavior.

Fourth, Holahan and Scanlon presented price and output data only for Medicare and Medicaid. If physicians shifted output from private to publicly insured patients, it would appear that ESP controls increased output, while all they actually did was influence output shares by payer type.

Evidence from Canada (where the output data apply to all sources of payment) lends support to the importance of examining total output rather than output components. Here the evidence is conclusive: fee controls worked. Fees were controlled under universal health insurance plans introduced by Canadian provinces during the late 1960s and early 1970s. Physician expenditures as a percentage of GNP in Canada were 1.21 percent in 1970, 1.16 percent in 1975, and 1.10 percent in 1980. For British Columbia only, the respective figures were 1.36 percent, 1.26 percent, and 1.28 percent.

Similar evidence can be seen in time series data for British Columbia from 1968 to 1985, which is shown in Figure 2. Real billings per physician have been divided by a fee index so that they are expressed in terms of services per physician. The most noteworthy features of Figure 2 are three dips that occurred in 1972–1973, 1976–1978, and 1983–1985. The first two declines are steep and short, whereas the third represents a more gradual but continuing trend. These three dips all coincided with periods of government efforts to limit physician fees. In 1972–1973 and 1976–1978, the profession was subject to wage and price

Table 1. Percentage Increase in Physicians per Capita and Annual Percentage Change in Physician Income, Canada, 1960–1979

Time Period	Annual Percentage Increase in Physicians per Capita	Annual Percentage Change in Physician's Income Relative to Average Worker's Income
1960s	1.78%	2.75%
1969–1974	3.60	−3.65
1974–1979	1.55	8.88

Source: Brown (1982).

controls. During these periods costs went down. More recently, average fees received in British Columbia rose only 2.8 percent from 1983 to 1984, and not at all in the next year. Fee negotiations in early 1985 placed a cap on total expenditures, which would reduce fees if total billings per capita rose more than 2 percent annually.

These comparisons show that the fee controls *are* an effective means to limit spending on physician services. The problem with fee controls is not that they do not constrain expenditures, but that the prices established by fee controls bear no relation to competitive prices that would allocate resources efficiently, both among the different physician services and between the physician services sector and other sectors of the economy. We will say more about this point later.

Other evidence from foreign countries

Advocates of the inducement hypothesis suggest that evidence from Canada and Europe proves that per capita utilization of physician services tends to rise in step with the physician/population ratio. This statement would imply that physician incomes are unaffected by the supply of physicians. However, this argument is contradicted by the simple "stylized" facts from Canada, which show that physicians' relative incomes tend to decrease when their numbers increase rapidly (see Table 1). Analyzing data from ten Canadian provinces from 1957 to 1971 and controlling for the effect of real per capita income, a time trend, and the existence of a provincial hospital insurance program, Schaafsma and Walsh (1981) found that real income per physician starts to fall when the number of physicians per 100,000 population exceeds about 80. In 1973, this number was exceeded in all Canadian provinces.

An even worse argument is that a nation's total health bill is determined in a simple proportionate way by the number of doctors. As shown in Table 2, the financial burden of universal health insurance in Canada was not related to the number of physicians per capita. For example, Manitoba and Nova Scotia both had ratios of 200. In Manitoba, 8.8 percent of GDP was devoted to health care;

Table 2. Physician Density and Health Care Spending, Canada

Province	Physicians per 100,000 Population, 1983	Health Care Spending as a Percentage of Gross Domestic Product, 1981
Alberta	167	5.63%
Saskatchewan	157	6.60
Manitoba	200	8.80
Ontario	205	6.91
Quebec	204	8.49
New Brunswick	131	10.62
Nova Scotia	200	11.89
Prince Edward Island	120	13.41
Newfoundland	168	12.35
British Columbia	204	7.50

Source: Health and Welfare Canada (1984a, 1984b).

in Nova Scotia, the health care share was much larger (11.9 percent). Other factors must be at work.

On a worldwide scale, efforts to correlate total health care spending and the number of physicians per capita are also fruitless. We examined variations in health care spending as a percentage of GNP in 1980 for seventeen OECD countries and the province of British Columbia. The estimated regression equation was:

$$\underset{}{\text{HCC}} = \underset{(2.168)}{6.91} + \underset{(0.428)}{0.00463}\text{DOCS} - \underset{(0.183)}{0.0415}\text{BEDS} \quad r^2 = 0.02 \qquad (8)$$

where HCC is total health care costs as a percent of GNP in 1980, DOCS is physicians per 100,000 population, and BEDS is acute care hospital beds (excluding psychiatric beds) per 1,000 population (source: OECD Data Bank, National Statistical Yearbooks, 1980–1982). Estimated *t* statistics are noted in parentheses below each coefficient. Clearly each country is unique. Doctors and hospital beds per capita have little influence on health care spending as a percentage of GNP.

Evidence from studies of small area variations

Numerous studies indicate that the rates of surgical and medical procedures differ substantially among small areas such as individual communities within a county or state. The study of these variations, now known as small area analysis, has been described by Wennberg et al. (1982: 813):

> In a typical small area analysis the smallest demographic units (such as zip codes of minor civil divisions) are assigned to hospital areas, based on the

location of the hospital with the plurality of hospital admissions from the demographic unit. The resultant populations, which usually range in size from 10,000 to 100,000 persons, are sufficiently large to obtain statistically "stable" procedure rates, particularly for common procedures. The numbers of physicians whose workloads contribute substantially to each area are usually small. Consequently, the physician contribution to the area rate for a particular procedure is determined by the decision of a small group of physicians regarding the indications for the procedure.

When factors which are rough proxies for illness rates (such as age and sex composition) are controlled, physician choices concerning treatment patterns have been said to be the dominant force influencing the use of selected procedures in the population. For example, Wennberg and Gittelsohn (1973) showed that demographically similar populations living in areas served by more general practitioners who do not perform surgery have fewer surgical admissions than areas served by general practitioners who do perform surgery.

Wennberg et al. (1982) interpret this evidence in a way that chides both N and B economists. They dismiss the assumption of rational agency on the part of physicians (at least in the current environment), but believe that the Bs have misinterpreted physician behavior as a "self-serving, deviant professional response to economic incentives" (ibid.: 812). They attribute small area variations largely to physician uncertainty about appropriate diagnostic and treatment patterns. As evidence for this interpretation, they cite examples where physicians have changed their professional behavior when provided with information on geographic variations.

The study of small area variations has made an important contribution by pointing out that provider uncertainty is an important determinant of medical practice patterns. This does not necessarily imply a breakdown in the physician/patient agency relation, however. Decisions made with imperfect information and uncertainty may characterize both patient and physician behavior in most medical markets, even though the physician acts according to his perception of the patient's best interests.

Small area analysis can also be faulted on methodological grounds. First, although it shows that variations exist, it makes very little effort to control for relevant explanatory variables. For example, differences in insurance coverage are not controlled. Second, the statistical interpretation of differences in small area procedure rates is problematic. Diehr (1984) noted that surprisingly large differences in utilization rates can arise by chance alone. For example, if utilization rates are thought of as observations from a normal distribution, the highest and lowest rates will differ (on average) by 2.3 standard deviations if five small areas are being compared and by 3.7 standard deviations if twenty areas are being compared, even if the underlying rate is the same in all areas.

A reconsideration of the demand inducement model

In our earlier paper we stated, "To assess adequately the notion of supplier-induced demand, it is essential to isolate qualitative aspects of physicians' services" (Sloan and Feldman 1978: 60). What appear to be variations in demand induced by physicians' discretionary behavior may be due to systematic increases in quality or amenities. For example, patients may value longer and more thorough visits or a more attractive doctor's office. Physician decisions to provide quality can be examined in a neoclassical framework. Some of the "anomalies" of the market which the Bs say are unique characteristics of this sector may be adequately explained by a neoclassical model in which quality is a decision variable. In our earlier paper, in which we employed such analysis, we suggested that quality, like quantity, may be undersupplied by a monopolist relative to the level that maximizes social welfare.

This insight was important because it suggested that demand shifting involves more than a simple recommendation to use *more* visits. The way that shifting occurs in practice is likely to involve a change in the quality or intensity of treatment. This is particularly true if one observes what a physician does for a patient over the course of treating an episode of illness (the number of visits per episode of illness is one indicator of treatment intensity). Thus, it seems reasonable to write the inverse demand function as $P = P(Q,q)$, where Q is quantity and q is quality of service or amenities.

A shortcoming of our earlier analysis, however, was the assumption that the physician chooses the optimal level of quality at a fixed level of quantity. We accepted the conventional prediction that less quantity is produced under monopoly than under competition. This result may not apply when both quantity and quality are physician decision variables, however. In the following extension of our earlier model, we show that multiple outcomes are possible. In fact, the only case that can be ruled out is overproduction of both quality and quantity by a monopolist. We then use the model to analyze the effect of one popular prescription for controlling the cost of physicians' services—price controls, or a "physician DRG" system—on quality and quantity of service.

As a reference point, we begin with a monopolist that produces a good of fixed quality. This monopolist produces too little of the good, but a unit subsidy can be used to induce it to expand its output to the socially optimal level. The desired subsidy equals the difference between price and marginal revenue at the output where the demand curve cuts the monopolist's marginal cost curve. Alternatively, a regulatory agency could control the monopolist's price at the socially optimal level. This converts the marginal revenue curve into a horizontal line at the optimal price and induces the monopolist to produce the optimal quantity.

It is unlikely that either remedy will work when product quality is also a decision variable. In a nutshell, the regulatory agency has one instrument—price—

to hit two targets: optimal quantity and quality. In order to understand the details of the regulator's dilemma, we analyze a formal economic model in which the physician maximizes profit:

$$\pi = P(Q,q)Q - C(Q,q), \tag{9}$$

where P(Q,q) is the inverse demand function and C(Q,q) is the cost function. First-order conditions for profit maximization are

$$\pi_Q = P + P_Q Q - C_Q = 0 \tag{10a}$$

$$\pi_q = P_q Q - C_q = 0. \tag{10b}$$

In contrast, the social welfare function is

$$W = \int_0^Q P(Q,q)dQ - C(Q,q). \tag{11}$$

Income effects are assumed to be small and are ignored. First-order conditions for welfare maximization are

$$W_Q = P - C_Q = 0 \tag{12a}$$

$$W_q = \int_0^Q P_q dQ - C_q = 0. \tag{12b}$$

In order to compare the profit and welfare-maximizing equilibria, it is useful to draw a graph of the first-order conditions as lines in (Q,q) space. The relevant properties of these lines are their slopes and positions. First, consider the slope between quality and quantity, dq/dQ, when the monopolist is maximizing profit with respect to quality. This can be found by differentiating the equilibrium condition, $\pi_q = 0$, to obtain $dq/dQ = -\pi_{Qq}/\pi_{qq} < 0$ if $\pi_{Qq} < 0$. Similarly, when the monopolist is maximizing profit with respect to quantity, $dq/dQ = -\pi_{QQ}/\pi_{Qq} < O$ if $\pi_{Qq} < O$. The significance of the negative sign of π_{Qq} will be explained below.

When the social welfare function is maximized with respect to quality and quantity, respectively, the derivatives are $dq/dQ = -W_{Qq}/W_{qq}$ and $dq/dQ = -W_{QQ}/W_{Qq}$. These are both negative, provided that $W_{Qq} < O$.

Terms π_{Qq} and W_{Qq} will be negative if $P_{Qq} < O$. In our earlier analysis of the physicians' services market we assumed that consumers who are willing to pay a high price also have high marginal valuations of quality, which implies negative P_{Qq}; furthermore, negative P_{Qq} is consistent with plausible demand functions, such as the Cobb-Douglas function.

The next problem is to determine which of the lines in each pair is steeper—that is, which cuts from above. This question can be answered by taking the difference in the derivatives:

$$dq/dQ_{(\pi_q=0)} - dq/dQ_{(\pi_Q=0)} = \frac{\pi_{QQ}\pi_{qq} - \pi_{Qq}^2}{\pi_{qq}\pi_{Qq}} \tag{13a}$$

$$dq/dQ_{(W_q=0)} - dq/dQ_{(W_Q=0)} = \frac{W_{QQ}q_{qq} - W_{Qq}^2}{W_{qq}W_{Qq}} \tag{13b}$$

The numerators of (13a) and (13b) are positive from the respective second-order conditions, and the denominators are positive if π_{Qq} and W_{Qq} are negative. Provided that the latter conditions are met, (13a) and (13b) are positive; thus, the lines representing maximization with respect to quantity cut from above.

Finally, we can take the differences between the respective first-order conditions. At a given level of quality,

$$\pi_Q - W_Q = P + P_Q Q - C_Q - P + C_Q = P_Q Q < 0. \tag{14}$$

The implication is that the monopolist tends to produce too little quantity relative to the social optimum. At a given quantity,

$$\pi_q - W_q = P_q Q - C_q - \int_0^Q P_q dQ + C_q < 0, \tag{15}$$

which must hold since the C_q terms cancel and the remaining terms are negative. In other words, the monopolist produces too little quality (at a given quantity) if the average valuation of quality exceeds the marginal valuation, and the sufficient condition is that consumers attracted as the monopolist moves down the demand curve have lower marginal valuations of quality.

These conclusions might seem obvious. If the standard monopolist underproduces quantity, then the variable-quality monopolist should underproduce quantity and quality. However, the inequalities of (14) and (15) are valid only when the other choice variable is held constant. Equilibrium effects depend on the relative strength of the two restrictions. Figure 3 incorporates all the results derived thus far. The lines representing first-order conditions slope downward, the π_Q and W_Q lines are steeper, and there are partial quality and quantity restrictions. Monopoly equilibrium at M involves more quality and less quantity than the social optimum (which is used as the origin of the graph).

This equilibrium corresponds to a market with quantity restrictions and overproduction of quality. Obviously, two other outcomes are possible: the monopolist can underproduce both goods, or the monopolist can produce too much

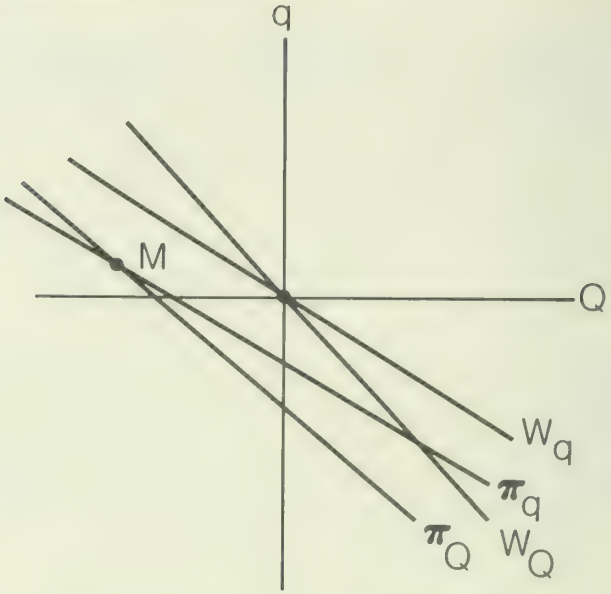

Figure 3. Monopoly Equilibrium With Too Much Quality and Too Little Quantity

quantity and too little quality. The last result is indeed surprising, given the naive supposition that monopoly always produces too little quantity.

Given this basic setup, we can analyze the economics of a physician price control system. First, we totally differentiate the profit function (equation [9]) for different parametric levels of profit, $\pi = \bar{\pi}$. For any fixed profit level, this defines a family of closed iso-profit contours around point M. The slopes of these contours are given by $dq/dQ = -\pi_Q/\pi_q$. Next, we draw the demand curve in (Q,q) space: for each price, consumer demand for quality versus quantity is represented by an upward-sloping line. Lines representing lower prices lie below and to the right of those for higher prices. The monopolist's problem is to maximize profit, given a constraint determined by the regulator's chosen price, say, $\bar{P}$. Graphically, equilibrium occurs at the point of tangency between an iso-profit contour and the $\bar{P}$ line.[3]

Constrained equilibrium is shown by point $\bar{M}$ in Figure 4. $\bar{M}$ must lie between π_Q and π_q because the price constraint slopes upward, and it is only between π_Q and π_q that the iso-profit contours also slope upward (the contours are horizontal

3. This result can be derived by maximizing profit, subject to the constraint that $P = \bar{P}$. First-order conditions for this problem can be solved to yield $\pi_Q/\pi_q = P_Q/P_q$. The left-hand side of this equality is the slope of an iso-profit contour, and the right-hand side is the slope of the demand function at $P = \bar{P}$.

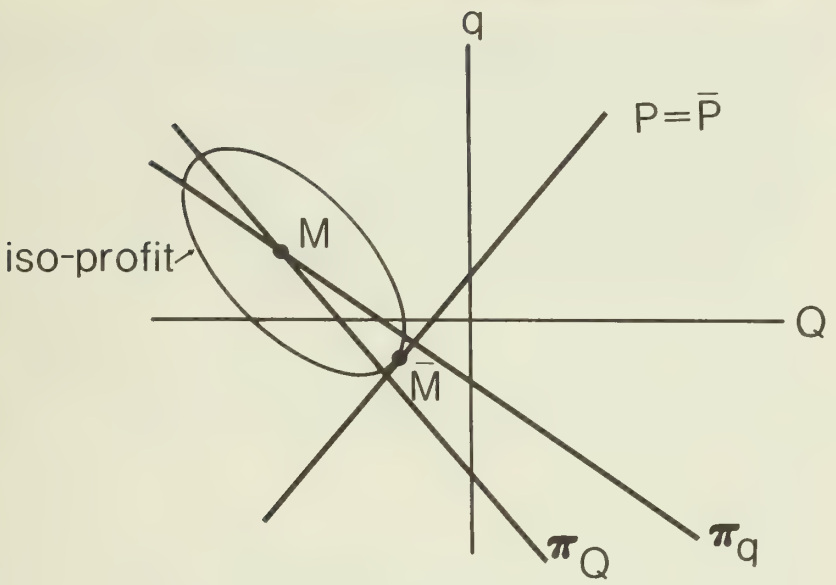

Figure 4. Equilibrium With Price Controls

where they cross π_Q and vertical where they cross π_q). We can generalize this finding to any controlled price: the monopolist's constrained equilibrium must lie within a "wedge" with vertex at M and arms formed by the π_Q and π_q lines. Since these lines are bounded away from the welfare-maximizing point at the origin of Figure 4, it follows that price controls cannot induce the monopolist to produce optimal levels of quality and quantity.

This conclusion is intuitive. The monopolist presently produces too much quality and too little quantity. The regulator forces the monopolist to cut its price in order to produce more quantity—but this causes quality to fall. For example, doctors may cut their visit lengths and boost the number of visits (or other billable services, such as laboratory tests) produced.[4] If price is cut to the level where quality is just right (along the Q-axis), quantity will be too low; if price is cut further to achieve the right level of quantity (along the q-axis), quality will be too low. Both targets cannot be hit at the same time.

As a technical exercise, we can also analyze the second-best properties of a price control system. This is done by totally differentiating the social welfare function (equation [11]) for different parametric levels of welfare to obtain a fam-

4. Medical care quality depends on much more than price levels—professional norms, community standards, defensive medicine, and peer reviews are also significant. Our prediction that quality will fall when prices are controlled below their equilibrium level represents a partial derivative, with the other factors held constant.

ily of iso-welfare contours centered about the socially optimal levels of quantity and quality. The slopes of these contours at $W = \bar{W}$ are given by $dq/dQ = -W_Q/W_q$. One of the contours will pass through point M (the monopolist's unconstrained equilibrium). It is not possible to prove that the slope of this iso-welfare contour is steeper than the slope of the π_Q line at point M, which is the sufficient condition for price controls to improve social welfare relative to M.

Again, this conclusion is intuitively appealing. Price controls may cause quality of service to decline rapidly. The offsetting increase in quantity induced by the controls may not justify the loss in quality. Thus, price controls may not contribute to a second-best welfare solution to the monopoly problem. Many critics may argue that *some* reduction in medical care quality (or the amenities and frills that pass as superficial indicators of quality) is socially justified. But this argument does not necessarily imply that price controls are an appropriate means to bring about the desired reduction in quality.

Conclusion

In this paper we have revisited the subject of competition in the physician services market, concentrating on physician-induced demand. Our visit has been deliberately narrow in scope. However, even a limited review of the recent literature on demand inducement has taken us through numerous studies and several econometric issues. This literature suggests that demand inducement may occur in the market for surgical services but that its extent is less than previously estimated. (Another interpretation is that the extent of demand inducement for surgery has declined over time.) Little evidence for demand inducement is found in the primary care physician services market.

We disagree with those who say that physicians generate demand to avoid price controls and that national health care spending is proportional to the number of physicians. The evidence does not support these arguments. But we do agree that substantial uncertainty may surround the physician's choice of diagnosis and treatment mode. However, this does not imply a breakdown of the agency relationship. We also suggest that small area studies can be improved by adding control variables that are required of any economic analysis of consumer demand.

We extended our earlier model of the physician's choice of quality to include quantity as a choice variable. We showed that a monopolist can do anything except overproduce both quality and quantity. Although some critics may argue that physicians' services are produced with too many amenities, it is not clear that price controls will bring this market to a second-best equilibrium. Price controls definitely cannot lead to socially optimal levels of both quality and quantity; only competition can.

If supplier-induced demand is quantitatively important, it has important implications for public policy. When doctors are paid by fee-for-service methods, they overproduce; under capitation, they underproduce. Thus, increasing the

number of capitated plans would amount to trading one sin for another. At first glance, the only remedy would appear to be a highly regimented control system over price, quantity, *and* quality. Such a system would be administratively cumbersome, to say the least.

Suppose that the Bs are correct, and that asymmetric information between doctors and patients confers considerable market power on the former which is often exercised. Physicians and hospitals have often contended that consumer welfare is not served by providing consumers with information on the alternatives. In particular, they argue that consumers are easily confused by false and misleading claims and by comparisons of outcomes and cost that do not control for case selection. Ironically, at the same time providers frequently oppose rigid controls, which are a potential solution for combating the adverse consequences of supplier-induced demand. A more practical public policy would be one which deals directly with the root of the problem—namely, a set of strategies to improve truthful information available to consumers. Such strategies would include having the Federal Trade Commission and state government agencies vigorously enforce statutes that prohibit dissemination of misleading and false claims. If an adequate amount of information is not forthcoming from the private sector, such strategies should also include public support for information production and dissemination. For example, the Health Care Financing Administration recently disseminated information on hospital mortality rates. Wennberg et al. (1982) have also suggested providing consumers with better information on the value of health services.

At this time it is not known what types of information are most useful and to whom which types are useful. Since most people in the United States (including about two-thirds of those under age 65) are covered by private health insurance related to the employment of a family member, the most useful information might pertain to the quality of health plans rather than to the quality of individual providers. This information could be used by employers to select health plans to offer to their employees and by employees when they choose a health plan. Information on waiting times to obtain an appointment, consumer complaints, and the like might be disseminated to employees in much the same way as similar information on airlines is now distributed.

References

Auster, Richard D., and Ronald L. Oaxaca. 1981. Identification of Supplier Induced Demand in the Health Care Sector. *Journal of Human Resources* 16 (3): 327–42.

Brown, Malcolm. 1982. Problems and Prospects Concerning Canada's Medical Insurance System. In *Economics and Health: Proceedings of the Fourth Australian Conference of Health Economists*. Canberra: The Australian National University.

Bunker, John P., and Byron Brown. 1974. The Physician-Patient as an Informed Consumer of Surgical Services. *New England Journal of Medicine* 290: 1051–55.

Cromwell, Jerry, and Janet B. Mitchell. 1986. Physician-Induced Demand for Surgery. *Journal of Health Economics* 5 (4): 293–313.

Diehr, Paula. 1984. Small Area Statistics: Large Statistical Problems. *American Journal of Public Health* 74 (4): 313–14.

Dowd, Bryan E., Roger Feldman, Steven Cassou, and Jennifer Hunt. 1984. Summary Report: 1984 Employee Survey. Minneapolis, MN: Center for Health Services Research, University of Minnesota and Minnesota Coalition on Health Care Costs.

Feldman, Roger D., and David A. Ballard. 1981. The Role of Waiting Time in a Prepaid Health Care System: Evidence from the British National Health Service. *Eastern Economic Journal* 7 (34): 175–85.

Fuchs, Victor R. 1978. The Supply of Surgeons and the Demand for Operations. *Journal of Human Resources* 13 (Supplement): 35–56.

Fuchs, Victor R., and Marcia J. Kramer. 1972. Determinants of Expenditures for Physicians' Services in the United States 1948–68. Washington, DC: National Center for Health Services Research and Development.

Hay, Joel, and Michael J. Leahy. 1982. Physician-Induced Demand: An Empirical Analysis of the Consumer Information Gap. *Journal of Health Economics* 1 (3): 231–44.

Health and Welfare Canada, Planning, Policy and Information Branch. 1984a. *Canada Health Manpower Inventory 1984*. Ottawa, ON: HWC.

———. 1984b. *National Health Expenditures in Canada 1970–82*. Ottawa, ON: HWC.

Holahan, John, and William Scanlon. 1978. *Price Controls, Physician Fees, and Physician Incomes from Medicare and Medicaid*. Washington, DC: The Urban Institute.

McCarthy, Thomas R. 1985. The Competitive Nature of the Primary-Care Physician Services Market. *Journal of Health Economics* 4 (2): 93–117.

Munch, Patricia. 1980. Economic Incentives to Order Lab Tests: Theory and Evidence. In *Socioeconomic Issues of Health*, ed. D. E. Hough and G. I. Misek. Monroe, WI: American Medical Association.

Newhouse, Joseph P., John E. Ware, Jr., and Cathy A. Donald. 1981. How Sophisticated Are Consumers About the Medical Care Delivery System? Santa Monica, CA: The RAND Corp.

Newhouse, Joseph P., Albert P. Williams, Bruce W. Bennett, and William B. Schwartz. 1982. Does the Geographic Distribution of Physicians Reflect Market Failure? *Bell Journal of Economics* 13: 493–505.

Office of the President. 1985. Health Status and Medical Care. In *Economic Report of the President*. Washington, DC: U.S. Government Printing Office.

Pauly, Mark V. 1978. Is Medical Care Different? In *Competition in the Health Care Sector: Past, Present, and Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

Pauly, Mark V., and Mark A. Satterthwaite. 1981. The Pricing of Primary Care Physicians' Services: A Test of the Role of Consumer Information. *Bell Journal of Economics* 12 (2): 488–506.

Phelps, Charles E. 1986. Induced Demand—Can We Ever Know Its Extent? *Journal of Health Economics* 5 (4): 355–65.

Reinhardt, Uwe E. 1985. The Theory of Physician-Induced Demand: Reflections After a Decade. *Journal of Health Economics* 4 (2): 187–93.

Rossiter, Louis F., and Gail R. Wilensky. 1983. A Reexamination of the Use of Physician Services: The Role of Physician-Induced Demand. *Inquiry* 20 (2): 162–72.

Schaafsma, Joseph, and William D. Walsh. 1981. The Supply of Canadian Physicians and Per Capita Expenditures for Their Services. *Inquiry* 18 (2): 185–90.

Sloan, Frank A., and Roger Feldman. 1978. Competition Among Physicians. In *Competition in the Health Care Sector: Past, Present, and Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

Sloan, Frank A., and William B. Schwartz. 1983. More Doctors: What Will They Cost? *Journal of the American Medical Association* 249: 766–69.

Sweeney, George H. 1982. The Market for Physicians' Services: Theoretical Implications and an Empirical Test of the Target Income Hypothesis. *Southern Economic Journal* 48 (3): 594–613.

Wennberg, John E., Benjamin A. Barnes, and Michael Zubkoff. 1982. Professional Uncertainty and the Problem of Supplier-Induced Demand. *Social Science and Medicine* 16: 811–24.

Wennberg, John E., and A. Gittelsohn. 1973. Small Area Variations in Health Care Delivery. *Science* 183: 1102–1108.

Has the Erosion of the Medical Marketplace Ended?

Joseph P. Newhouse

Abstract. This paper updates tests of the validity of three models of medical price inflation: a standard model, in which changes in demand press against inelastic supply; a dynamic version of the standard model, in which high levels of insurance induce high rates of product innovation and development; and a model of increasing inefficiency, in which consumers have weak incentives to search out efficient suppliers. Earlier statistical support for the third model has weakened, which provides some evidence that the regulatory and competitive initiatives of the last decade are having their intended effects. But time series measures of medical prices upon which the statistical evidence relies have important methodological problems, so other types of evidence are useful. Trends in expenditure in other countries and in HMOs suggest that the most important explanation of medical price inflation is the dynamic version of the standard model, although the other models have some validity as well.

Ten years ago I described three models that might account for continuing medical price inflation (Newhouse 1978, 1981).[1] Model 1 was the conventional model that dominated much of the literature to that point and that is still present, especially in the less technical literature. Its premise was that health insurance, especially Medicare and Medicaid, raised the demand for medical care services, and that this increased demand pushed against an inelastic supply curve and drove up medical care prices.

My previous papers pointed out some logical problems with this model. First, the model could account for one-time inflation, but could account for continuing inflation only if insurance continued to increase or if the effect of a one-time change in insurance continued to be felt for an extraordinarily long time. Because the average coinsurance rate for hospital services had been fairly stable since 1967, a continuing increase in coverage could not explain inflation in the hospital sector, where price increases seem to have been the largest; moreover, there was

The author acknowledges the financial support of the RAND Corporation and the research assistance of Anil Bamezai. Dan Waldo of the Health Care Financing Administration provided unpublished data on expenditure and out-of-pocket payments, and David Salkever gave helpful comments. None of the above necessarily agrees with the views expressed in this paper.

1. The 1981 paper is a more technical version of the 1978 paper; readers of this paper may wish to refer to the 1981 paper.

no evidence that a one-time change should be felt for an extraordinarily long time, and that explanation was rather implausible in any event. Second, in defining its supply curve, the model presupposed consumers who minimized their private costs; but most insurance, including the largest program, Medicare, did not reward consumers who chose lower-cost hospitals. If consumers did not benefit from choosing a lower-cost supplier, what mechanism insured the existence of a competitive supply curve (that is, a curve showing the lowest price for a given quantity and quality of services)?

The second model I described was a dynamic version of the conventional model, in which a high level of insurance induced product innovations onto the market that would otherwise not be profitable. Given conventional price indices—for example, expense per admission—such innovations appeared as inflation. Model 2 could in principle account for the first logical problem with model 1 (a continuing increase in indices of medical prices with stable insurance, income, and factor prices), but it did not account for the problem of defining a competitive supply curve.

Model 3 was one of increasing inefficiency: under this model, consumers' lack of incentive to search out efficient suppliers made it possible for inefficient firms to survive. Although this model did not necessarily imply continuing inflation (there could be a constant amount of inefficiency), it was logically consistent with continuing inflation. This model, however, implied that a competitive supply curve did not exist.

In my earlier work I tested these three models a number of ways, using time series data from 1949 to 1974 on the measured prices of drugs and hospital, physician, and dental services. The tests soundly rejected model 1 as the sole explanation of the inflation in medical prices, while the data were consistent with both models 2 and 3.

Both models 2 and 3 implied that then-current financing arrangements (i.e., reimbursement insurance) were unstable because medical care expenditures were likely to increase faster than society's willingness to pay. Hence, I predicted that such arrangements were likely to change, although I could not specify when this would happen or what the nature of the changes would be.

Subsequent events have borne out the prediction of instability; the past decade has seen both greater regulation and efforts to introduce more price competition. Regulatory developments include the adoption by several states of all-payer rate regulation of hospitals, as well as Medicare's adoption of the prospective payment system. Competitive developments include the growth in numbers and membership of health maintenance organizations and preferred provider organizations, both of which contract with hospitals and physicians on the basis of price. The Medicare "participating physician" concept can be seen as an attempt to increase price competition in the market for physician services, as can contracting in Medicaid programs.

Against this background, in this paper I re-estimate the equations I estimated in the earlier paper, adding 11 more years of data to the 26 years used in that

paper; I then determine the consistency of the results against the earlier results. Next, I describe what I now see as an important limitation of the method used here (and indeed of all attempts to quantify medical price inflation)—namely, serious methodological problems with disaggregating expenditure increases into price and quantity increases. Addressing these problems seems quite difficult, but is obviously necessary to test theories of medical price inflation. Finally, I look at other evidence that has accumulated to help discriminate among the three models, especially between models 2 and 3.

Results of the earlier paper

The three models briefly described above were tested by estimating a simple four-equation system:

$$DP_{it} = B_0 + B_1DC_{it} + B_2C_{it} + B_3DGNP_t + B_4DGNPDEF_t + u_{it},$$

where

DP_{it} = the percentage change in price for the ith service in the tth year,

DC_{it} = the percentage change in average coinsurance for the ith service in the tth year,

C_{it} = the level of average coinsurance for the ith service in the tth year,

$DGNP_t$ = the percentage change in GNP in the tth year, and

$DGNPDEF_t$ = the percentage change in the GNP deflator in the tth year.

The index i ranged over four services: expense per adjusted hospital admission, the physician price index, the dental price index, and the drug price index (the latter three indices came from the consumer price index). The same four services will be used in the re-estimation. In the original paper t covered the years from 1949 to 1974, and in this paper will cover the years 1949 to 1985. DC and DGNP are included as demand shifters, and DGNPDEF is included as a supply shifter.

Four tests of the models were derived from this simple model. (The logic behind these tests is described in the original paper and is not repeated here.) (1) Some forms of model 1 (though not all) predict that with DC, DGNP, and DGNPDEF unchanging, DP will vary randomly around zero and will not be a function of C. By contrast, in model 2 the induced product innovation causes DP to increase as C falls. Model 3 is also consistent with DP increasing as C falls. (2) Model 3 predicts that the elasticity of price with respect to coinsurance as coinsurance changes will be more negative for hospital services and in general will vary with coinsurance. Models 1 and 2 yield no prediction. (3) Model 3 predicts that the change in the elasticity of price with respect to coinsurance will be larger for hospital services. Models 1 and 2 yield no prediction. (4) In models 1 and 2 DGNP and DGNPDEF should be positively related to price changes; model 3 gives the medical firm more discretion as C falls toward zero, and DGNP and DGNPDEF may not be related to DP.

The results of these tests using the original data were as follows: (1) At the then-current (1974) coinsurance rates there was support for the proposition that DP was greater the lower C was, consistent with models 2 and 3; but the support was weaker at the sample mean levels. The predicted DP for hospital services with C at 1974 levels and DC, DGNP, and DGNPDEF equal to zero was 13 percent, and one could comfortably reject the null hypothesis that DP was zero ($p = .03$). (2) The second test yielded weak support for model 3: the elasticity of price with respect to coinsurance was greater for hospital services, but one could only reject the hypothesis that as coinsurance changed, the elasticity was the same for hospital services as for the other services at the 10 percent level. (3) The third test yielded stronger support for model 3: the rate of change in the elasticity was greatest for hospital services, and one could reject the null hypothesis of similarity with the other services at the 2 percent level. (4) The fourth test showed that DGNPDEF was strongly related to physician and dental services and to drugs but not to hospital services, as model 3 predicted. In hindsight, however, the implementation of this test was flawed.[2] The test in principle relates to price change, but the measure of hospital "price" that was (and is) used is expense per adjusted admission. Expense should be definitionally related to a factor price index. Hence, this test should not be used with these dependent variables.[3] Moreover, the result suggests that DGNPDEF is not a good measure of factor prices for hospitals. It is a mystery why DGNPDEF should be related to a price index for physician and dental services as well as for drugs but not to expense per admission, but because DGNPDEF is clearly related to these other three measures I have left it in the equations.

DGNP was negatively related to DP in all four equations, and the relationship was significant at the 1 percent level for dental services and drugs and at the 5 percent level for physician services. This unexpected sign but strong relationship suggests that DGNP is acting as a proxy for both demand and supply variables and that the latter are predominating. The equations were rerun omitting DGNP, and nothing important changed. Methods allowing for lagged effects of changes in coinsurance did not materially change any conclusion.

Testing these results with additional data

Table 1 shows updated descriptive statistics on coinsurance and changes in the indices of medical prices used in this paper. In comparison with the earlier paper,

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2. I am indebted to Victor Fuchs for this point.

3. One may ask why expense per admission and not the CPI should be used. For many years the CPI for hospital services was based only on semiprivate room charges, which account for only about half of hospital revenue. The other half comes from charges for ancillary services, which could have moved somewhat differently. There is the further problem that Blue Cross and Medicare, which represent over half the market, pay for cost, not for charges (i.e., the transaction price is not the list price).

Table 1. Descriptive Statistics on Coinsurance and Medical Price Indices

Variable	Mean	Standard Deviation	Minimum	Maximum
Annual percentage change in expense per adjusted hospital admission, 1949–1985	9.68	4.22	3.0	21.2
Annual percentage change in physician fee index, 1949–1985	5.63	3.09	1.5	12.3
Annual percentage change in dental fee index, 1949–1985	4.90	2.77	0.5	11.8
Annual percentage change in drug price index, 1949–1985	3.24	3.94	−1.5	11.7
Percentage of hospital expenditure paid by consumer, 1949–1985	14.84	7.16	7.3	37.3
Percentage of physician expenditure paid by consumer, 1949–1985	52.11	18.52	26.3	86.3
Percentage of dental expenditure paid by consumer, 1949–1985	88.36	14.02	62.9	100.0
Percentage of drug expenditure paid by consumer, 1949–1985	91.26	8.18	76.3	99.6

Source: Newhouse (1981). The raw data are available in RAND publications R-2141-HEW and N-2646-RC.

the mean nominal increase in price for hospital, physician, and dental services is about 1 to 1.5 percentage points higher than in the 1949–1974 period; the drug price index is more than 2 percentage points higher. The average coinsurance rate has not changed much for hospital services, but it has noticeably fallen for the other three services.

Table 2 shows the results of estimating the equation on data from 1949 to 1985. In re-estimating the equations I have changed from the Cochrane-Orcutt estimator to a generalized least squares (GLS) estimator.[4] Because the results are somewhat

4. The only difference between the two methods is that GLS includes the first observation of the

Table 2. Regression Coefficients and *t* Statistics

	C	DC	DGNPDEF	DGNP	Intercept/ $(1-r)$	*n*	D.W.	*r*
Cochrane-Orcutt								
$/Adjusted admission	−.289	−.22	.286	−.083	12.83	36	1.76	.37
	(1.62)	(.61)	(.85)	(.45)	(3.52)			
Physician fees	−.083	.023	.473	−.138	8.45	36	1.53	.42
	(3.49)	(.46)	(3.76)	(1.87)	(5.25)			
Dental fees	−.101	.014	.466	−.142	12.32	36	1.84	.15
	(5.17)	(.13)	(4.22)	(2.04)	(6.02)			
Drug fees	−.393	.21	.349	−.115	38.20	36	1.10	.76
	(5.09)	(1.21)	(3.53)	(2.25)	(5.39)			
Generalized least squares								
$/Adjusted admission	−.179	−.025	.272	−.130	11.65	37	1.70	.37
	(1.59)	(.70)	(.85)	(.70)	(3.97)			
Physician fees	−.046	.012	.460	−.163	6.78	37	1.46	.42
	(2.39)	(.25)	(3.53)	(2.13)	(4.59)			
Dental fees	−.080	−.009	.398	−.173	10.91	37	1.57	.15
	(3.77)	(.94)	(3.30)	(2.25)	(4.86)			
Drug fees	−.034	+.021	.380	−.135	6.00	37	.74	.76
	(1.17)	(.10)	(2.95)	(2.02)	(1.94)			

Note: Two-tailed *t* values with 32 degrees of freedom are 1.69 (10 percent), 2.04 (5 percent), and 2.74 (1 percent). The lower and upper bounds of the Durbin-Watson test with 37 observations and 4 explanatory variables and a 5 percent probability in the lower tail are 1.25 and 1.72.

sensitive to this change of estimator, I show in Table 2 the results of both methods of estimation.

In both cases a system of seemingly unrelated regressions has been estimated. A first-order autocorrelation coefficient has then been estimated for each service, and a system of seemingly unrelated regressions has been estimated on data transformed for first-order autocorrelation. In the top section of the table, the Cochrane-Orcutt results are presented for purposes of comparison with the earlier paper; in the bottom section the GLS results are presented. The GLS results will be used in the remainder of this paper.

As in the earlier paper, DGNP enters with a negative sign, although a positive sign was expected. In the earlier paper, the results did not depend on whether DGNP entered the equation. Because DGNP seems to be measuring something real, I have not re-estimated these equations with DGNP omitted but have simply kept DGNP as a covariate, as I did in the earlier paper.

Although at a superficial level the results do not seem much changed from those of the earlier paper, in fact there has been a fall in the coefficient of C in the hospital equation by more than a factor of two. This fall tends to weaken many of the results of the earlier paper.

The results from the first test are shown in Table 3. The logic of this test is as follows: According to the first model, if DC, DGNP, and DGNPDEF are all zero (i.e., if the demand and supply shifters included here are all unchanging), the predicted change in medical prices should be zero. This test is applied both at the sample mean of C (where confidence intervals are tightest) and at current (1985) values of C; except for hospital services, current values are well below sample mean values.

In the original paper this test showed support for models 2 and 3. At the 1974 value of C for hospital services, one could reject at the 3 percent level the null hypothesis that the predicted change in hospital price was zero. Tests at the sample mean were qualitatively consistent with models 2 and 3 but were less precise.

In the updated results the support for models 2 and 3 is weaker. The point estimate of the predicted rate of hospital inflation at a low but unchanging C is still substantial, but its standard error has considerably increased. This increase in the standard error reflects in part the decrease in measured hospital inflation in the most recent year without a substantial change in the average coinsurance rate; I return to this point below.

The hypothesis in the second test is that the elasticity of the price change with respect to coinsurance would be greater for hospital services than for the other services. In model 1 (the standard competitive model) there is no prediction on

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time series with a weight of sqrt $(1 - r^2)$; the remaining observations are the same for the two estimators. Park and Mitchell (1980) have shown that including the first observation results in important efficiency gains in time series of the magnitude used here.

Table 3. Predicted Annual Percentage Change in Price by Service if Coinsurance Were Constant at Mean and Current Levels, All Other Variables Constant[a]

Service	C at Sample Means[b]	Significance Level of One-Tailed t Test Against Null Hypothesis of No Change	C at Current Level[b]	Significance Level of One-Tailed t Test Against Null Hypothesis of No Change
Hospital	9.00	.15	9.99	.21
	(8.64)		(12.11)	
Physician	4.38	.03	5.57	.20
	(2.18)		(6.52)	
Dentist	3.84	.23	5.82	.23
	(5.04)		(7.60)	
Drug	2.90	.38	3.41	.38
	(9.55)		(12.24)	

a. Based on generalized least squares equations shown in lower panel of Table 2.
b. Standard errors in parentheses.

this elasticity; results depend on the underlying demand and supply elasticities, which in this case do not appear to predict that the elasticity with respect to hospital services would be greatest. For the same reason model 2 yields no prediction. Model 3, however, does predict that the elasticity will be greater for the most highly insured service, hospital services.

The original results favored this hypothesis, although the precision was not good. In the revised results the precision is even worse; as in the earlier results, the elasticity is greatest for hospital services, but the differences with the other three services are not significant at conventional levels (see Table 4).

Table 4. Significance Levels for Tests of Whether Elasticities for Hospital Services Differ from the Other Three Services[a]

Comparison of Service	Significance Level At: Sample Mean Coinsurance	Current Coinsurance
Hospital/physician[a]	.31	.37
Hospital/dentist[a]	.31	.38
Hospital/drug[a]	.32	.35
Hospital/other than services[b]	$> .25$	$> .25$

a. Uses one-tailed t test for difference in means.
b. Combines probabilities from above three t tests; see Wallis (1942). The value shown is a lower bound on the p value because the test assumes independence, which does not hold in this case.

Table 5. Change in the Elasticity of Price with Respect to Coinsurance as Coinsurance Changes for Four Services and Tests of the Difference Between Hospital and Other Services

Service	Change in Elasticity[a]	Significance Level of Two-Tailed *t* Test Against Null Hypothesis of No Change
Hospital	−.179	.12
Physician	−.046	.02
Dentist	−.080	.0007
Drug	−.034	.25

Comparison of Service	Significance Level of One-Tailed *t* Test Against Null Hypothesis of Equal Change
Hospital/physician	.14
Hospital/dentist	.20
Hospital/drug	.11
Hospital/other three	.07[b]

a. Based on generalized least squares estimates from lower panel of Table 2.
b. Lower bound because independence of three comparisons is assumed.

The third test was whether the change in the elasticity as coinsurance changes was greatest (in absolute value) for hospital services. This test was strongly supported in the earlier results. When comparing the hospital sector against the other three services, one could reject at the 1 or 2 percent level (depending on specification) the null hypothesis that the elasticities were the same.[5] In the revised results the qualitative pattern is the same, but the results are less precise; one can now reject the hypothesis that the hospital elasticity is the same as for the other three services at only the 7 percent level or more (see Table 5).

One can test whether the recent regulatory and competitive changes in the medical marketplace have affected results by examining the residuals for recent years. The 1985 residual for hospital expense per admission is more than two standard deviations below the fitted line, but other residuals are not noteworthy (results not shown). Thus, there is some suggestive evidence that the erosion of the medical marketplace is ending, but the evidence is far from compelling.

In sum, the evidence supporting model 3 has weakened. The first test, which was consistent with both models 2 and 3 in the earlier results, is weaker in the updated results. The second test was not very informative in the earlier results and remains so. The third test favored model 3 in the earlier results; in the updated results the evidence from it has also weakened. The fourth test suggests that mar-

5. Although not stated in the earlier paper, these probabilities of rejection are overstated because they assume independence among the three comparisons.

kets for physician and dental services as well as for drugs behave as if they were competitive with respect to input price changes. This finding is consistent with all three models. No inferences should be drawn from this test about the hospital market because the dependent variable is an expense measure and not a price measure.

This weakening of support for model 3 could reflect a change in the structure of the medical marketplace; the 1985 residual for hospital services gives some support to that hypothesis. Another, not mutually exclusive, explanation of this result is that there could be methodological problems with the tests. I will point out such problems in the next section.

Problems with the method

The methods used above depend critically on the validity of the price indices used. Unfortunately, there are important problems in the measures of price employed. These problems are well known and are therefore not worthy of extended discussion, but they are worth mentioning because they cast some doubt on the validity of both the updated and the original results.

First, all the measures of price are in the nature of the prices of certain inputs rather than a more final product, such as the expense of a medical episode. For example, the hospital price measure used here is expense per adjusted admission. If the treatment of certain types of problems (e.g., cataract surgery) is shifted to an outpatient basis and that change in location makes treatment (e.g., of cataracts) cheaper, the change will not register as a price decrease. Indeed, if the average patient remaining in the hospital is more costly to treat, the reverse would be true—expense per adjusted admission would rise. There is a similar problem with the physician and dental components of the consumer price index used here. For example, if the number of physician visits to treat a problem changes, the CPI does not change.

Second, the problem of adjusting for quality change is ever present. For example, suppose there is a greater use of noninvasive diagnostic technology such as magnetic resonance imaging, which either increases the likelihood of a correct diagnosis or reduces pain or does both. The greater use will appear in the expense per adjusted admission as a pure price increase, but this will overstate the rate of price increase. Conceptually, the correction for quality change ought to be based on the consumer's willingness to pay for the change, but this is obviously difficult to measure and no such correction is made in practice.

A third well-known problem is that the CPI measures list price, not transaction price. As PPOs and HMOs spread and obtain discounts from the market price, these effective price reductions will not necessarily affect the CPI. Another example of this problem is the increased role of the Medicare economic index in determining Medicare physician payments, as well as the below-market prices of Medicaid in most states.

Table 6. Recent Changes in Initial Deductibles and Out-of-Pocket Limits

	1982	1984	1986
Percentage of insurance plans requiring front-end deductible for inpatient hospital charges	30	63	n.a.
Comprehensive major medical deductibles greater than $100	9	39	55
Group major medical plans with limits on out-of-pocket expense	78[a]	98	n.a.

a. The value shown is for the year 1980.

Sources: Row 1: cited in Goldsmith (1984), based on a survey of 1,185 firms. Row 2: Wyatt Company (1986). The Wyatt survey covers salaried employees at 1,418 firms. Row 3: Health Insurance Association of America (1980).

Fourth, the CPI prices only certain inputs (e.g., certain types of physician visits). If any pattern of cross-subsidies among visits changes, these changes will potentially affect the CPI. Although the issue of cross-subsidies is best known for hospital services (Harris 1979), it is quite conceivable that there are cross-subsidies among charges for physician procedures that are differentially insured (because of differential elasticities of demand) and that these patterns change over time. The change over time might relate to changes in insurance coverage (e.g., greater coverage of outpatient services might raise outpatient charges relative to inpatient charges) or to an insurer's actions (e.g., Medicare's actions to reduce fees for certain procedures on the grounds of inherent reasonableness). Clearly the cross-subsidy between two types of visits could change in a way that would leave a true or complete price index unchanged, but if only one of the type of visits is priced in the CPI, the CPI will show an inappropriate increase or decrease.

Not only are there problems with the measures of price change used in the above analyses (and virtually all other attempts to disaggregate changes in expenditure into price and quantity changes), but the measure of insurance is crude. As is well known, the average coinsurance rate ignores the issue of nonlinear pricing schedules. In recent years there has been a marked increase in initial deductibles for hospital services, as well as an increased use of limits on out-of-pocket payments (Table 6). The effects on the average coinsurance rate have approximately offset, but the effects on demand need not have. The recent decline in patient days among those under the age of 65 has been disproportionately due to a decrease in admissions rather than a decrease in length of stay. This is as one would anticipate from an increase in deductibles, but it appears unrelated to cost sharing if one uses the average coinsurance rate as a measure.[6] The constancy

6. Limiting his analysis of cost sharing to the average coinsurance rate may explain Evans's (1985) puzzle about why demand for hospital services fell among those under age 65.

of the average coinsurance rate in the face of this change in structure may well explain the negative hospital residual for 1985 described above.

In light of these methodological issues, it is a matter of judgment whether the inferences drawn in either the earlier paper or from the updated results are valid. Indeed, a skeptic could question whether any of the empirical efforts that rely on the types of price indices used in this paper have produced valid results. Of course, that would cast a cloud over the results of virtually all studies that use time series data on medical prices, not just this one. Although there is clearly much precedent for using CPI-type price indices, the methodological problems just described as well as the weakening of the new results make it worthwhile to ask what other evidence might be used to discriminate among the three models.

Other evidence

The results from the Health Insurance Experiment show that when technological change is held constant, a change from a family deductible of approximately $1,000 to free care increases demand by about 45 percent (Manning et al. 1987). Moreover, there is no evidence of a lagged response in demand. This shift represents a change in average coinsurance from 31 to 0 percent. Between 1950 and 1984 the average coinsurance rate for all medical services shifted from 66 percent to 28 percent (Levit et al. 1985). Although the range of the average coinsurance rate in the experimental results is different, the absolute change in percentage points is roughly the same magnitude as the national change from 1950 to 1984, and the change in relative price (relative to the midpoint of the interval, as in the calculation of an arc elasticity) is much greater. But the change in real expenditure from 1950 to 1984 was on the order of a factor of 7. Thus, it seems reasonable that the change in insurance (technology held constant) can only account for a small portion—perhaps a tenth—of the postwar increase in medical care expenditures.[7] This would appear to be evidence that model 1 played some role—but certainly not a major role—in generating price and expenditure increases in the postwar period.

Data on increases in premiums at HMOs are also suggestive. For the decades of the 1960s and 1970s these increases were at about the same rate as expenditures in the fee-for-service sector (Luft 1980; Newhouse et al. 1985). But HMOs probably have less incentive than, say, a hospital to make discretionary price increases, because many members will bear the marginal premium increase and so may leave the HMO, whereas the hospital does not lose fully insured patients. This similar rate of increase is not consistent with the increased inefficiency tale of model 3, but it is consistent with model 2 if new procedures and products cause most of the expenditure increase and if consumers value much of the change.

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7. $(145 - 100)/(600 - 100) \approx 0.1$.

For example, suppose HMO members spend 70 percent as much as a comparable fee-for-service group at any point in time (Manning et al. 1984). If the rate of increase in HMO expenditure is the same as it is in the fee-for-service sector, as appears to be the case, and the increase in expenditure in both systems is primarily attributable to new technology, it follows that HMOs are adopting the new technology at a rate about 70 percent of that of the fee-for-service system. This is consistent with the story of model 2 about induced technological change, although it suggests that much of the change is valued at more than its resource costs.[8]

Finally, international data are suggestive. As is well known, the rapid rate of increase in medical expenditure is not confined to the United States, but is found in virtually all developed countries (OECD 1985). Because the other countries have very different financing arrangements than the United States, one must look for an explanation that can transcend the American insurance arrangements. Using the same logic as in the previous paragraph, model 2 is consistent with this evidence.

Because of both these latter pieces of evidence as well as the weakening of the statistical evidence for model 3, I am now inclined to emphasize technological change (model 2) as the primary explanation of the historical increase in expenditure and in the measured price indices, although the other two models may have some validity as well. Much of the change in expenditure, however, may not be a welfare loss; judging from experience at one HMO, perhaps 30 percent or less may be a welfare loss.[9] Of course, this is still a large amount in absolute terms—perhaps as much as 3 percent of GNP—but it is not large compared to the factor of 7 increase.

What of the prospects for the future? Model 2 postulated an above-optimal rate of product innovation because of the distortion in the market test from insurance.

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8. David Salkever has pointed out that my inference that HMO premiums reflect the willingness of consumers to pay for new technology is weakened by two arguments. First, some portion of the premium is subsidized because, as an employer-paid fringe benefit, the premium is paid with before-tax income; and second, malpractice concerns may cause the HMO to adopt fee-for-service technologies, because malpractice is defined by a standard of customary practice—presumably the fee-for-service standard. Although I agree that these arguments do weaken one's confidence in the inference I have drawn, I do not think they are fatal. As for the first point, insofar as the employer contributes a lump sum, the marginal difference between the HMO and fee-for-service premiums will be paid with after-tax income. Insofar as fee-for-service finances its higher costs through greater cost sharing, that too would have been paid with after-tax dollars in the pre-flexible-spending-account era covered by these data. As for the second argument, the issue is how much force it has. If any effect of malpractice on the HMO style of practice still leaves a 30 percent differential in cost between HMOs and fee-for-service practices, one can question whether malpractice is strong enough to cause a similar rate of increase in expenditures in the two types of delivery systems.

9. It is not clear by how much to reduce the 30 percent for the benefits of the technology that was induced. The usual convention would indicate a reduction by a factor of 2, but one can rule out important health status benefits for the average person from the additional services in fee-for-service (Ware et al. 1986; Sloss et al. 1987). There are, however, benefits in patient satisfaction (Davies et al. 1986).

As noted above, the structure of insurance is now changing; the erosion of the marketplace seems to be reversing itself. HMOs and PPOs, if not subsidized at the margin, provide a direct test of the willingness of consumers to pay, and administered price systems such as the prospective payment system provide a mechanism for making collective decisions on the willingness to pay for new innovations. Whether expenditures and price indices will continue to increase at historic rates will thus depend on whether consumers, acting either individually or collectively, are willing to pay for the bulk of the innovations. Based on HMO and international experience, there is reason to think they will pay for many of them. During a period of transition, however, measured price increases could well be lower.

Conclusions

From the above findings I draw several conclusions. First, ignoring the methodological problems with the indices of price used in this study, the statistical support for the third model of medical price inflation—discretionary increases in price—has weakened. This could be because model 3 never was correct or because it once was correct but is no longer. There are some qualitative reasons to think that even if model 3 were once correct, it is no longer an important factor. These reasons include the adoption of the prospective payment system by Medicare, the institution of all-payer rate regulation in some states, the spread of HMOs and PPOs, and contracting in five state Medicaid programs. Consistent with these changes, the 1985 observation for price change in hospitals lies more than two standard deviations below the fitted line.

Second, in light of the changes in financing just cited, the prediction of the paper of ten years ago that the then-extant financing arrangements were unstable seems amply supported.

Third, despite the correct prediction of the earlier paper that financing arrangements would change, its logic depended heavily on the validity of the consumer price index and expense per adjusted admission to measure price changes. For a variety of reasons the validity of these measures is questionable, and the conclusions of the statistical analysis in both the earlier paper and this paper are therefore problematic.

Fourth, there is fortunately other evidence on the mechanism behind the sustained increase in medical prices and expenditure. Results from the Health Insurance Experiment suggest that changes in coinsurance, with technology constant, can only account for a modest portion of sustained postwar rise in medical care expenditure. Thus, model 1 has some validity, but it cannot be used as a principal explanation.

Fifth, the similar rate of increase of expenditure between HMOs and fee-for-service practices and the increase found in other countries with different financing arrangements are both consistent with the explanation that much of the increase

in expenditure is due to new procedures, capabilities, and products—in short, to technological change. The majority of this increase was probably valued by consumers at more than its resource cost, although a significant portion probably was not.

Finally, the erosion of the marketplace seems to be ending. If in fact the introduction of new procedures and products has caused the high measured rate of price increase, then in the future that rate of increase should be more closely tied to the willingness of American consumers to pay, either individually or collectively.

References

Davies, Allyson R., John L. Ware, Jr., Robert H. Brook, Jane R. Peterson, and Joseph P. Newhouse. 1986. Consumer Acceptance of Prepaid and Fee-for-Service Medical Care: Results from a Randomized Trial. *Health Services Research* 31 (3): 429–52.

Evans, Robert G. 1985. Illusions of Necessity: Evading Responsibility for Choice in Health Care. *Journal of Health Politics, Policy and Law* 10 (3): 439–67.

Goldsmith, Jeff. 1984. Death of a Paradigm: The Challenge of Competition. *Health Affairs* 3 (3): 12.

Harris, Jeffrey E. 1979. Pricing Rules for Hospitals. *Bell Journal of Economics* 10 (1): 224–43.

Health Insurance Association of America. 1980. *A Profile of Group Major Medical Expense Insurance in the United States*. Washington, DC: HIAA.

Levit, Katherine R., Helen Lazenby, Daniel R. Waldo, and Lawrence M. Davidoff. 1985. National Health Expenditures, 1984. *Health Care Financing Review* 7: 1–35.

Luft, Harold S. 1980. Trends in Medical Care Costs. *Medical Care* 18: 1–16.

Manning, Willard G., Arleen Leibowitz, George Goldberg, William H. Rogers, and Joseph P. Newhouse. 1984. A Controlled Trial of the Effect of a Prepaid Group Practice and Use of Services. *New England Journal of Medicine* 310: 1505–10.

Manning, Willard G., Joseph P. Newhouse, Naihua Duan, Emmett Keeler, Arleen Leibowitz, and M. Susan Marquis. 1987. Health Insurance and the Demand for Medical Care: Results from a Randomized Experiment. *American Economic Review* 77 (3): 251–77.

Newhouse, Joseph P. 1978. The Structure of Health Insurance and the Erosion of Competition in the Medical Marketplace. In *Competition in the Health Care Sector: Past, Present, Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

———. 1981. The Erosion of the Medical Marketplace. In *Advances in Health Economics and Health Services Research*, vol. 2, ed. Richard Scheffler. Westport, CT: JAI Press.

Newhouse, Joseph P., William B. Schwartz, Albert P. Williams, and Christina Witsberger. 1985. Are Fee-for-Service Costs Increasing Faster than HMO Costs? *Medical Care* 23 (8): 960–66.

Organization for Economic Cooperation and Development. 1985. *Measuring Health Care, 1960–1983*. Paris: OECD.

Park, R. E., and B. M. Mitchell. 1980. Estimating the Autocorrelated Error Model with Trended Data: Further Results. *Journal of Econometrics* 13 (2): 185–201.

Sloss, Elizabeth M., Emmett B. Keeler, Belinda Operskalski, George A. Goldberg, Joseph P. Newhouse, and Robert H. Brook. 1987. Effect of a Health Maintenance Organization on Physiologic Health: Results from a Randomized Trial. *Annals of Internal Medicine* 106 (1): 130–38.

Ware, John E., Jr., Robert H. Brook, William H. Rogers, Emmett B. Keeler, Allyson Ross Davies, Cathy Donald Sherbourne, George A. Goldberg, Patricia Camp, and Joseph P. Newhouse. 1986. Comparison of Health Outcomes at a Health Maintenance Organization with Those of Fee-for-Service Care. *Lancet* i (848): 1017–22.

Wyatt Company. 1986. *1986 Group Benefits Survey*. Washington, DC: Wyatt Company.

Competition among Health Insurers, Revisited

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Abstract. This paper updates our 1977 study of health insurance competition. We find that insurers are now far more willing to compete by controlling costs. Large consumer copayments and insurer utilization controls, once deemed politically infeasible, have become commonplace. HMOs and especially PPOs are booming. Blue Shield and Blue Cross market share and market power are declining. We discuss why the insurance market has changed and conclude with thoughts on the future.

In health insurance, an insurer contracts to pay all or a portion of bills for medical services deemed "necessary" in return for a fixed premium. The service such insurance provides is risk pooling. The cost of that service is the difference between the premium and the expected benefits, which is known in the industry as the "loading charge." The degree of competition affects the size of the loading charge and the amount of innovation insurers will undertake to minimize the administrative costs that underlie it.

But efficiency in the provision of health insurance involves more than just minimizing administrative costs. Insurance also has profound effects on the rate of use and price of health services. When much of the cost of medical services is covered, more services will be used and patients will devote less effort to seeking providers with lower prices. The effect insurance has on the provision and pricing of medical care services has led insurers to design policies to lessen its impact. These policies have included increasing the use of deductibles and coinsurance (especially for those services most affected by health insurance coverage) and, more recently, extensively reviewing the medical necessity of services. The degree of competition in the health insurance market dictates how much insurers use such policies. Thus the degree of competition affects not only the resources that go into administering insurance, but also the resources that go into medical services.

In a previous paper (Frech and Ginsburg 1978) we argued that the health insurance market was effecting fewer efforts by insurers to contain health care costs

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The views expressed in this paper do not reflect those of the Physician Payment Review Commission.

than a more competitive insurance market would. In the ten years since that paper, the health insurance market has become more competitive and cost-containment efforts have increased markedly. In this paper we document the changes in the health insurance market during this decade and attempt to explain the key reasons for these changes. We do not attempt to judge the success of the recently established cost-containment efforts. We conclude with some thoughts on what the market will be like ten years into the future.

Competition in 1977

In 1977 the health insurance market was dominated by two segments of roughly equal size: commercial insurers and Blue Cross/Blue Shield plans. The commercial segment was characterized by relatively free entry and competitive conditions. In contrast, Blue Cross/Blue Shield plans had carefully defined territories that usually did not cross state boundaries. Most Blue plans received significant regulatory and tax advantages at the state and federal levels, such as lower premium taxation rates[1] and exemption from local property taxes and state and federal income taxes. In return for these tax advantages, the Blues were expected to operate in the public interest, which often included offering policies to individuals at premiums set by the state insurance commissioner. In some states, the Blues also enjoyed substantial discounts on hospital and physician services prices. These discounts were generally not the result of regulation but derived from the original provider sponsorship of the plans. The large market share of some Blue plans has allowed the continuation of such discounts.

In view of the advantages conferred on the Blues, why did the Blues and the commercial insurers both have stable and roughly equal market shares up to 1977? The cost of the Blues' public responsibilities was one reason, but cost alone does not explain why the Blues did not gain market share. Another reason was the Blues' product line, which was limited to benefit structures that involved only minimal cost sharing. Many Blue plans did not sell policies that required deductibles or coinsurance for hospital care, so commercial insurers did not have to compete with the Blues for customers who wanted substantial cost sharing—they had to compete only for those customers who had a slight preference for the inclusion of cost sharing. Another reason why the Blues did not increase their market share is that they "spent" their advantages on administrative slack, which is often inevitable when a company has a long-standing competitive advantage.

From a public policy perspective, the limited product line of the Blues was perhaps the most important concern. The Blues' practice of selling only policies with minimal cost sharing led to a lower level of cost sharing in the overall market. Many consumers were led to purchase plans that included less cost sharing than

1. State governments tax health insurance premiums at rates up to 4 percent.

the plans they would have purchased otherwise because the Blues offered an attractive premium for plans with full coverage. But because such practices led to less cost sharing in the aggregate, health care costs were driven higher than they would have been otherwise.

Some claim that insurers need large market shares to force cost-containment efforts on providers, which implies that Blue Cross/Blue Shield concentration leads to lower health care costs. In our 1978 paper, we tested that argument with a regression model using data for 1969. In states where Blue Cross had a larger market share, hospital prices and costs were higher. The model estimated that halving the Blue Cross market share would decrease hospital prices and hospital costs by 10 percent and 6 percent, respectively. Hay and Leahy (1984) have since confirmed these results with more recent and more detailed data. They estimated that halving the Blue Cross/Blue Shield market share would cut hospital costs by 6 percent and the incidence of surgery per admission by 7 percent.[2] From these two studies it is apparent that the advantages granted to the Blues may have actually led to higher costs and prices for health services.

Competition in 1987

In the past decade the insurance market has changed dramatically. Most large employers are now self-insured. Although many employers use commercial insurers and Blue Cross/Blue Shield plans as administrators, insurers must compete with third-party administrators (TPAs) for employer business. Employers have also taken a more active interest in the benefit structure and administration of their plans. In addition, preferred provider organizations (PPOs) have begun to transform the nature of fee-for-service health insurance, and health maintenance organizations (HMOs) have become a more significant part of the health insurance market.

Benefit structure changes. An important development in health insurance is the increased use of deductibles and coinsurance. Surveys by employee benefit consultants indicate a pronounced trend towards higher cost sharing beginning in the late 1970s and continuing to the present. The sharpest changes involved hospital deductibles. According to a survey by Hewitt (1984), the proportion of plans with inpatient deductibles increased from 30 percent in 1982 to 63 percent in 1984. Other surveys based on broader samples show smaller changes (Jensen, Morrisey, and Marcus forthcoming).

The insurance trade press has credited this change to increased employer concern about cost containment. Why concern was translated into action at this point in time rather than earlier is not clear. In any case, it is generally accepted that

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2. This calculation assumes that the Blues lose market share to commercial insurers. The estimates differ slightly under the assumption that market share is lost to HMOs.

the changes in health benefit structures reflect the demands of the customers (employers) rather than any independent initiatives on the part of insurers.

Some Blue plans have continued to limit the range of their benefit structures. In Massachusetts, where the Blues account for 70 percent of the private insurance market, hospital deductibles and coinsurance are still rare in group coverage (Frech forthcoming; Dyckman 1986: 33-29–33-31). Nevertheless, the magnitude of the shifts in benefit structure implies that many Blue plans have responded to customer demands by offering plans with significant cost sharing. The preference of the Blues for selling insurance without cost sharing now has less influence on the overall degree of cost sharing than it has in the past, with a resulting diminution of forces for price and cost increases in health care.

Managed care. Increasing cost sharing is a relatively simple and predictable way to reduce health benefits costs, but it has not been the only method of cost containment used by third-party payers. Insurers and employers are increasingly using administrative mechanisms to review the appropriateness of use of services. One review technique that is now used extensively is preadmission certification, a procedure that determines whether the hospital is the appropriate setting for care. Many plans also concurrently review lengths of stay to limit time in the hospital. Some plans require second opinions for surgery. Others have given administrators discretion to expand the definition of covered services for a specific case if there is a likelihood of reducing overall treatment costs for a patient. These types of activities are known as "managed care."

Insurers have moved quickly to develop the ability to provide these services, often by purchasing small firms that already have such expertise. Indeed, the effectiveness of managed care, which is much more difficult to measure than other aspects of an insurer's services, enables insurers to differentiate their products to a larger degree.

Increased product differentiation is usually thought to reduce the competitiveness of a market, but in the case of managed care other factors work in the opposite direction. Managed care services might reduce the importance of traditional Blue Cross regulatory advantages. For example, a commercial firm that pays a higher premium tax has an additional opportunity to convince an employer that overall costs are lower when products are differentiated along this dimension.

Perhaps more important is the fact that managed care does not have to be bundled into the health insurance product. As long as the employer is large enough to be experience-rated (or is self-insured), managed care services do not have to be purchased from the insurer. Instead, the employer can hire utilization management firms to perform these services, and the employer can benefit directly from reduced claims. The ability to split managed care from traditional insurance services limits any reduction in competition that might result from product differentiation. On balance, we suspect that the growth in the use of managed care services has made the insurance market more competitive and has reduced the

overall costs of insurance. Managed care increases administrative costs, but apparently those employers ordering managed care believe that the insurance-induced overuse of services has declined.

Health maintenance organizations. The growth of HMOs between 1977 and 1987 has been nothing short of spectacular. HMOs increased their market share from 2.5 percent in 1977 to 11.5 percent in 1987, with the most rapid growth occurring in the latter half of the period.[3] This growth has increased the competitiveness of the health insurance market in several ways. First, the growth of HMOs means that additional competitors have entered the market. These new competitors are particularly valuable for competition because many of them come from backgrounds other than traditional health insurance and because they have introduced a different product into the market. Second, these new competitors have been able to reduce the advantage of hospital and physician discounts that some Blue plans have. Because of their ability to channel patients to providers with whom they contract, even HMOs with relatively small market shares have been able to negotiate substantial discounts, often larger than those allowed the Blue plans.

Pressure from HMOs has led to competitive responses from traditional insurers. First, insurers have become more innovative in the design of traditional policies by developing PPOs (see below) and introducing managed care into insurance policies. These responses have worked to reduce the quantity- and price-increasing effects of health insurance. Second, some of the larger traditional insurers have gone into the HMO business. Insurers bring to the HMO business access to capital, underwriting and claims processing experience, and extensive marketing organizations. Insurer entries to the HMO market have accelerated the growth of HMOs, thus magnifying the competitive impact of this development.

Self-insurance and third-party administrators. Large numbers of employers have switched to self-insured status during the past decade. Researchers at the Health Care Financing Administration estimate that over 50 percent of covered employees are in self-insured plans (McDonnell et al. 1986).

When an employer self-insures, it typically hires either an insurer or a firm specializing in claims processing (i.e., a third-party administrator, or TPA) to process claims. Some employers have also purchased stop-loss coverage from insurers to limit their exposure to the risks of catastrophic illness. Self-insurance is attractive because of improved cash management (employers pay claims directly rather than paying a premium in advance), exemption from state insurance regulation (both premium taxes and restrictions on benefit structures), and in-

3. Data on HMO enrollment are from Interstudy.

creased control over the parameters of the health benefits plan (Ginsburg and Sunshine 1987).

Increased use of self-insurance increases the competitiveness of the insurance market in several ways. First, as employers gain more control over their plans, cost-containment initiatives are likely to be incorporated more rapidly. Their ability to pursue a benefit structure with cost sharing is facilitated, since the Blues' advantage based on exemption from premium taxes is eliminated. Second, self-insurance has opened the insurance market to an additional type of competitor, the TPA. While the insurance market does not have high entry barriers, we believe that the entry of a new type of competitor is providing an additional spur to competition and innovation.

Preferred provider organizations. PPOs are contracts among insurers (or TPAs), providers, and consumers. The providers agree to serve PPO consumers on preferential terms—offering a lower price and agreeing to cooperate with utilization review restrictions, for example. In turn, consumers are given financial incentives (such as reduced coinsurance and additional covered services) to favor PPO providers. For the PPO to be successful, a significant number of patients must change their source of medical care to preferred providers.

PPO contracts can be additional provisions of traditional insurance policies (or self-insured health plans) or special policies. In the latter case, a lower premium or coverage of additional types of services can be used as an incentive. PPOs differ from HMOs in that services from providers outside of the preferred panel are still covered (though with more cost sharing) and providers are not usually at risk for the volume of services used by patients.

PPOs reduce the tendency of insurance to raise prices of medical services. They not only provide an acceptable way for consumers to be placed at risk for choosing a high-priced provider, but facilitate the consumer's search process by providing a directory of preferred providers. Through utilization review, PPOs also often reduce the impact of insurance on the rate of use of services. Many PPO organizers say the added cooperation on the part of providers in utilization review processes is a key advantage of PPOs.

The development of PPOs has proceeded rapidly. The most recent estimate that we are aware of (de Lissovoy et al. 1987) indicates that in the summer of 1986, 16 million persons were covered by plans that included PPOs. This rapid development made the market for health insurance more competitive. The entrance of PPOs has allowed new entrants, such as TPAs, to build market share. PPOs have also lessened the importance of the traditional discounts of Blue Cross/Blue Shield plans. A superior PPO can give an employer a good reason to switch insurers.

Rate setting and cost-shifting limits. Rate-setting efforts have traditionally been concerned with containing hospital costs, but the implementation of the

Medicare prospective payment system in 1983 and increased concern about the financing of uncompensated care led rate-setting systems to focus more on setting payment differentials among health insurers. This focus has often reduced payment differentials, thus eroding a competitive advantage of some Blue Cross plans.

Integration of provider and insurer. A recent development (which may be short-lived) is insurance writing by large hospital chains. For example, Humana and American Medical International have purchased small insurance companies and marketed PPO-like insurance policies which offer less cost sharing for patients who use the chain's hospital network. Others have formed joint ventures with major insurers to market such policies.

This integration is unlikely to affect competition among insurers to a substantial degree, however. By negotiating with individual hospitals, most major insurers have developed PPO networks and sell insurance policies that are similar to those of the integrated organizations. Indeed, nonintegrated insurers may be able to put together more attractive networks of hospitals because they are not tied to an existing hospital chain. In addition, transaction costs do not seem to be reduced appreciably by integration. Integrated organizations have experienced large losses from their health insurance operations and have been abandoning the business (American Medical International is one example).

Tax treatment of Blue Cross/Blue Shield plans. The tax advantages of the Blues have been eroding. As budgets tightened, governments questioned whether public policy goals were being accomplished with the foregone tax revenue. In 1986 the federal government sharply curtailed the exemption of the Blues from federal income tax. State governments have increasingly monitored the public service activities that the plans perform and have insisted on minimum levels of activity if tax advantages are to be retained. Some Blue plans have concluded that the costs of public service activities expected far exceed the resources available from tax advantages and have sought to reincorporate as mutual insurers.

There has also been a trend towards Blue Cross/Blue Shield plans competing with each other. For example, the state of Maryland sued the Maryland and District of Columbia Blue plans to end their explicit agreement dividing the state of Maryland.[4] In Ohio, the Cincinnati plan has been competing in Cleveland, although the Blue Cross and Blue Shield Association has been attempting to enforce the plans' previous territorial agreement. Perhaps this trend will ultimately increase competition among Blue plans.

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4. State of Maryland v. Blue Cross and Blue Shield Assn., 620 F. Supp. 907 (1985).

Why the change in the insurance environment?

The previous section discussed a number of developments that have changed the degree and nature of competition in the health insurance market. This section attempts to identify the forces that are behind these developments. It is difficult to determine the relative importance of the different forces, however.

Changing attitudes of corporate management. During the period in question, top corporate management took a more active interest in containing the costs of employee health benefits programs. In 1981 a study appeared that cast aspersion on the interest and ability of corporate purchasers of health care to take an active role in cost containment (Sapolsky et al. 1981). Although to our knowledge the study has not been updated, there is substantial evidence of increased leadership in cost containment at the top levels of corporate management and an upgrading of the position of employee benefits manager. Why did the change occur at this time?

A number of explanations are plausible. Perhaps the central reason is the growth in the proportion of compensation costs going toward health benefits, which increased from 1.6 percent of wages and salaries in 1965 to 5.3 percent in 1985 (U.S. Chamber of Commerce 1986). When more dollars are involved, sharp increases in premiums are more likely to capture the attention of top management. While the health benefits costs had been growing relative to other compensation for some time, the higher proportion in the 1980s made health care cost containment a more viable source of cost reduction.

The relatively severe recession of 1982 may have contributed to the acceleration of these trends. Although classical economic models state that firms are constantly seeking to reduce costs, the business and historical literature suggests that managers work harder to reduce costs when profits have declined or when the viability of the firm is at stake. As the level of health benefits costs increased sharply, many firms chose to reduce them in response to declining profitability.

The 1981 federal tax cut that reduced individual income tax rates also contributed to increased employer and employee interest in cost containment. Recall that when employer-paid premiums are paid from pre-tax dollars, the income tax system subsidizes health insurance. Lowering income tax rates reduced the magnitude of the tax subsidy, thus increasing the rewards for cost containment. The further reduction in marginal tax rates from the 1986 tax reform will spur additional activity in the future. The most recent research implies a substantial responsiveness in the demand for employment-based insurance to changes in marginal tax rates.[5] While estimates of the magnitude of this relationship have varied widely, all predict an increase in cost sharing in response to declining tax rates.

5. Phelps (1986) finds that the elasticity of demand for premiums with respect to price net of tax

Medicare and Medicaid policies. Budgetary concerns led to important policy developments in the Medicare and Medicaid programs, which in turn led to changes in the market for private health insurance. From the perspective of private insurers, the most critical development in Medicare policy has been the prospective payment system, and the most critical development in Medicaid has been the tightening of eligibility requirements.

Both developments have made private purchasers (employers and their insurers) more sensitive to the issue of cost shifting—that is, the practice of hospitals to charge different prices to different payers. Medicare's prospective payment system (PPS) has private payers worried that Medicare could cut its payments more than hospitals would be willing or able to reduce their costs, with the shortfall shifted to them through increased markups of charges over costs. Actually, the opposite occurred during the first few years of PPS (profits on Medicare service increased), but the pressure of the federal deficit has led most to conclude that generous Medicare reimbursement under PPS is only transitional. Medicaid eligibility reductions have led to similar risks for private purchasers. Many people who are no longer eligible for Medicaid due to lower real income standards for welfare eligibility are still admitted to hospitals, and some of them are not insured. Hospitals can recoup the costs of caring for these uninsured poor only by charging other patients more.

Private purchasers have taken two courses in response to the specter of increased cost shifting. First, some have organized politically to support state government actions to reduce payment differentials. These actions have ranged from traditional state rate-setting efforts to policies regulating only payment differences to policies that directly address the uncompensated care issue. The latter category includes selective Medicaid eligibility expansions and the development of mechanisms to make payments to hospitals that provide significant amounts of uncompensated care. Such payments are often funded through taxes on hospital revenues from private patients.

Second, private purchasers have sought to develop mechanisms to obtain discounts from full charges for both hospital and physician services. The key to obtaining favorable prices is the ability to channel patients to providers that agree to a discounted price—hence the development of PPOs and HMOs.

The professional standards review organization program. While the professional standards review organization (PSRO) program did not fare well in analyses of its cost effectiveness, it may have contributed to the development of more effective utilization review in both the private and public sectors. The program

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benefits is approximately -2. Taylor and Wilensky (1983) estimated much smaller elasticities, but Phelps argues that these estimates suffer from a substantial bias that stems from using data for individual households to model decisions made at the employment group level.

did accumulate significant practical experience and stimulated the interest of researchers and policymakers in developing better techniques. What was learned from the PSRO program was not lost, since many of the organizations continued as peer review organizations and served private clients as well, and since the staffs of those that disbanded often found employment with insurers and other private-sector organizations offering utilization review services. The PSRO experience also conditioned providers to utilization review activities.

Antitrust restrictions on physician groups. For years, the growth of innovative health insurance schemes (such as HMOs and PPOs) was retarded by boycott threats from physician groups. However, the development of antitrust law and the attention of antitrust law enforcement agencies has reduced these barriers to new forms of financing.

Prior to 1963, national hospital accreditation standards conferred great economic power on local medical societies. In order to be accredited, hospitals were required to exclude from their medical staff physicians who were not members of their local medical societies. By excluding physicians practicing in HMOs and PPOs from medical society membership, local physician groups were able to block or hinder the development of these organizations (Havighurst 1978). In 1963, a court decision eliminated the requirement of local medical society membership as a prerequisite to hospital access.[6]

Groups of physicians have also boycotted insurers who used new cost-control measures. For example, in objection to utilization controls, the Michigan State Medical Society boycotted the local Blue Shield plan. The ultimate result was a cease and desist order from the Federal Trade Commission in 1983.[7]

A recent example of an antitrust enforcement activity occurred in Modesto and Turlock in Stanislaus County, California. The county medical society formed its own PPO and quickly signed on most of the local physicians. The PPO prohibited its member doctors from signing up with any other PPOs, thus effectively denying competing PPOs and HMOs entry into the Modesto and Turlock markets. Only when threatened with an antitrust suit by the U.S. Department of Justice did the Stanislaus County Medical Society disband its PPO (Gabel and Ermann 1985).

Entry of third-party administrators. Since employers do not usually have specialized knowledge of the health care market and of health insurance, they have sought outside help in managing their self-insured plans. Originally, this function was undertaken by TPAs such as Dual-Plus or AdMar in Los Angeles, Affordable Health Care Concepts in Sacramento, and Martin E. Segal Co. in Denver. These firms smoothed the transition to self-insurance and doubtless saved

6. Griesman v. Newcomb Hospital, 40 N.J. 384, 192 A.2d 817 (1963).
7. *In re* Michigan State Medical Society, 101 F.T.C. 191 (1983).

the groups both money and managerial headaches. But more important for the evolution of a more competitive and efficient marketplace, these small independent firms, most of which began as either benefits or actuarial consulting firms, invented the PPO and provided the necessary expertise for its early growth.

One might have expected the established insurance firms to be the innovators. But instead, these small new TPAs and consultants provided the necessary entrepreneurship that transformed the entire industry. According to Havighurst (1978), the health insurance industry has been all too willing to strive for consensus and avoid innovation. The entry of the new third-party administrators has changed that. Under the pressure of this new competition, commercial insurers and Blue Cross/Blue Shield plans have begun to offer TPA services and organize PPOs.

The process recalls the theory of Schumpeter (1934) that most competition is likely to come from new products or ideas rather than from producing old products at a slightly lower cost. Through "creative destructionism," once-dominant firms are displaced by newer firms offering new products.

Increased physician supply. The physician/population ratio is rising rapidly. The graduates of U.S. medical schools doubled from 1965 to 1981, and the number of foreign-trained physicians has also grown. This has raised the number of physicians per 1,000 population from 1.4 to almost 2.0 (Noether 1986). A neglected benefit of this growth has been easier development of innovative health insurance schemes and a general growth of price competition.

New physicians are especially likely to cut prices to increase their patient loads, either directly or by joining a PPO. Since new physicians have fewer regular patients, price reductions are more likely to increase their revenues. In addition, they have not yet formed a network of friendships and working relationships with other doctors, and thus are less susceptible to subtle pressure to avoid competing too sharply. The net result is more competition and lower physician incomes.

Competition in 1997

The health care financing system is still in transition. Most agree that the system of 1987 is only a preliminary response to the powerful forces for change.

Predicting the future is always difficult, and predicting the direction of the health care system is no exception. Two factors make prediction particularly uncertain. One is the fact that the system is at the early stage of a cycle of innovation. Some of the current innovations may be discarded, and some of those that are ultimately successful may have not yet appeared, or at least may have not yet been widely noticed.

The second factor concerns the reaction of the public sector. To date, public officials have generally applauded the degree of innovation in the private financing of health care. A few years hence, we expect the nation's leadership to

take stock of the changes experienced during the 1980s and decide if the developments are consistent with the nation's values. If the reaction is unfavorable, government could attempt to change its course. An early indication of the public sector's assessment of recent developments is a provision in the Omnibus Budget Reconciliation Act of 1986 that limits the degree to which hospitals and HMOs can offer incentives to physicians to limit use of services.

The forces that have caused change are likely to continue. The supply of physicians will continue to increase for the foreseeable future. Although federal government subsidies to medical schools are a thing of the past, few would predict public efforts to substantially reduce class sizes.

Federal antitrust enforcement in health care is also unlikely to change. Even the Reagan administration's relatively permissive antitrust policy has not reduced vigilance toward the health care industry. Administration officials have long considered anticompetitive practices to be obstacles to a "procompetition" strategy in the health care industry.

Employers will continue to look for ways to contain health care costs. While the decline of the dollar has removed some of the pressure from abroad, corporate takeovers have increased pressure to maximize the present value of the firm. With marginal tax rates declining substantially as a result of the 1986 tax reform, incentives to contain the costs of health benefit programs are now much stronger. Further, a cap on the amount of employer contributions to health benefit plans that is not taxable as income to the employee might be enacted within the next few years. A philosophy of reducing marginal tax rates (or avoiding future increases) through broadening the tax base is now widely accepted in Congress. With such incentives, employers are likely to continue to make increased use of cost sharing and experiment further with managed care and PPOs.

A tightening of Medicare prospective payment rates for hospitals over the next few years appears inevitable. Hospitals have found Medicare patients to be highly profitable under PPS. This has reflected both some errors in setting initial rates and faster than expected responses by hospitals to the new incentives. Reductions in Medicare payments relative to costs will increase the importance for private payers of negotiating prices with hospitals through HMOs and PPOs. Like airline passengers after deregulation, it could be a rare patient who pays list price.

The force most difficult to predict is the policy response to the increasing proportion of patients that are uninsured. The combination of Medicaid eligibility restrictions and changes in the economy have resulted in a clear trend toward a larger proportion of the population without health insurance. Access to charity care has probably been reduced by the competitive pressures on providers, who are losing the wherewithal to cross-subsidize these patients. The policy response to this problem is likely to affect health insurers and their new competitive tools.

References

de Lissovoy, Gregory, Thomas Rice, Jon Gabel, and Heidi Gelcer. 1987. Preferred Provider Organization One Year Later. *Inquiry* 24: 127–35.

Dyckman, Zachary. 1986. Testimony Regarding Medical Malpractice Rates. Boston: Commissioner of Insurance, State of Massachusetts.

Frech, H. E., III. Forthcoming. Monopoly in Health Insurance: The Economics of Kartell v. Blue Shield of Massachusetts. In *The Political Economy of Health Care*, ed. H. E. Frech III. San Francisco: Pacific Research Institute and Ballinger.

Frech, H. E., and Paul B. Ginsburg. 1978. Competition Among Health Insurers. In *Competition in the Health Sector: Past, Present, and Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

Gabel, Jon, and Dan Ermann. 1985. Preferred Provider Organizations: Performance, Problems, and Promise. *Health Affairs* 3: 24–40.

Ginsburg, Paul B., and Jonathan Sunshine. 1987. *Cost Management in Employee Health Plans: A Handbook*. Santa Monica, CA: The RAND Corporation.

Havighurst, Clark C. 1978. Professional Restraints on Innovation in Health Care Financing. *Duke Law Journal* 1978: 303–89.

———. Forthcoming. Explaining the Questionable Cost Containment Record of Commercial Health Insurers. In *The Political Economy of Health Care*, ed. H. E. Frech. San Francisco: Pacific Research Instutite and Ballinger.

Hay, Joel W., and Michael J. Leahy. 1984. Competition Among Health Plans: Some Preliminary Evidence. *Southern Economic Journal* 50: 831–46.

Hewitt Associates. 1984. *Company Practices in Health Care Cost Containment*. Lincolnshire, IL: Hewitt Associates.

Jensen, Gail, Michael Morrissey, and John Marcus. Forthcoming. Cost Sharing and the Changing Pattern of Employer-Sponsored Health Benefits. *Milbank Quarterly*.

McDonnell, Patricia, Abbie Guttenberg, Leonard Greenberg, and Ross H. Arnett III. 1987. Self-Insured Health Plans. *Health Care Financing Review* 8: 1–16.

Noether, Monica. 1986. The Effect of Government Policy Changes on the Supply of Physicians: Expansion of a Competitive Fringe. *Journal of Law and Economics* 24: 231–62.

Phelps, Charles E. 1986. Large-Scale Tax Reform: The Example of Employer-Paid Health Insurance Premiums. Working Paper No. 37. Rochester, NY: Rochester Center for Economic Research.

Sapolsky, Harvey, Drew Altman, Richard Greener, and Judith D. Moore. 1981. Corporate Attitudes Toward Health Care Costs. *Milbank Memorial Fund Quarterly* 59: 561.

Schumpeter, Joseph A. 1934. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.

Taylor, Amy, and Gail Wilensky. 1983. The Effect of Tax Policies on Expenditures for Private Health Insurance. In *Market Reforms in Health Care*, ed. Jack Meyer. Washington, DC: American Enterprise Institute.

U.S. Chamber of Commerce. 1986. *Employee Benefits 1985*. Washington, DC: U.S. Chamber Research Center.

Health Insurance Without Provider Influence: The Limits of Cost Containment

Lawrence G. Goldberg and Warren Greenberg

Abstract. In our previous paper, we showed that market forces can play a significant role in controlling health care costs and that a considerable amount of cost containment effort was pursued by third-party insurers in Oregon in the 1930s and 1940s. Although physicians were able to thwart this cost-control effort, a 1986 Supreme Court decision, *FTC v. Indiana Federation of Dentists*, found that a boycott of insurers by dentists violated Section 5 of the Federal Trade Commission Act. Further investigation of recent developments, including the recent *Wickline v. California* decision, indicates that the primary barriers to cost containment today are not obstructive tactics by providers or provider-controlled health insurance plans. Rather, the primary barriers are increases in the development and diffusion of new technology and society's apparent preference for paying for new tests and procedures regardless of economic efficiency.

In our previous paper (Goldberg and Greenberg 1978) we showed that market forces can play a significant role in controlling costs. In this paper we document the attitude of the judiciary toward cost containment in the last decade. In addition, we note that the advance of technology appears to have increased costs and raised further questions about the effectiveness of a competitive approach to cost containment.

The first section of this paper examines cost containment in Oregon in the 1930s and 1940s and the subsequent demise of such efforts due to the obstructive tactics of physicians. The following section examines cost containment in Indiana by dental insurers and the efforts of dentists to hinder these efforts. Finally, after examining the recent *Wickline* decision, this paper suggests that the primary barriers to cost containment today are not due to provider obstructive tactics or to provider-controlled health insurance plans, but are due to increases in the de-

The authors thank Lawrence Brown for his helpful comments, and also thank Marlene DePecol for research assistance and Syed Hossain for word processing assistance.

velopment and diffusion of new technology and society's apparent preference for paying for new tests and procedures regardless of their economic efficiency.

Cost containment in Oregon

In the early part of the twentieth century a system of contract medicine developed in the states of Oregon and Washington in response to the health insurance needs of the lumber, railroad, and mining industries. Originally begun as closed-panel plans similar to health maintenance organizations (HMOs), these "hospital associations" soon evolved into private, for-profit insurance companies. By 1935, the hospital associations had garnered 60 percent of the health insurance market in Oregon (Goldberg and Greenberg 1978: 233).

The hospital associations acted vigorously to control the costs of hospital and physician care. To obtain reimbursement, physicians needed prior approval before performing major surgery (except in emergencies) as well as before conducting many medical procedures. In addition, hospital length of stay, tests, and procedures were reviewed retrospectively, and physician fees were strictly monitored. These cost-control efforts were similar to present-day utilization review techniques used in the private and public sectors (Greenberg 1985). It is possible that these cost-containment efforts partially curtailed the rightward shift in the patient's demand curve that can result from an increased amount of health insurance—that is, moral hazard associated with increased health insurance may have been reduced.

Physicians viewed the behavior of the hospital associations as directly interfering in the physician/patient relationship. In 1941, the state medical society introduced a statewide prepaid medical plan, the Oregon Physicians Service (OPS). OPS was to be controlled by physicians, thus removing the possibility of significant interference in the doctor/patient relationship. The strategy also included an organized, widespread refusal by physicians to be reimbursed directly by hospital associations, thereby negating any potential third-party cost-containment efforts. Third-party insurers that reimbursed patients for less than the physician's charge (because of a belief that the physician's fees or utilization were excessive) found themselves in disfavor with patients (Goldberg and Greenberg 1978: 243). Within a few years the physicians' strategy had succeeded. The physicians had implemented a statewide insurance plan that usually covered their charges and did not question their procedures.

In 1948 the Justice Department brought suit under Sections 1 and 2 of the Sherman Act against OPS, the Oregon State Medical Society, eight county medical societies, and eight physicians for monopolizing prepaid medical care (ibid.: 232). But in a 7–1 decision, the Supreme Court ruled against the government, suggesting that anticompetitive behavior by the Oregon State Medical Society and its members ceased with the establishment of OPS (ibid.: 247). The Court observed that "there are ethical considerations where the historic direct rela-

tionship between patient and physician is involved which are quite different than the usual considerations prevailing in ordinary commercial matters.''[1] Cost containment by hospital associations and insurers in Oregon was thus effectively eliminated.

For more than two decades very little cost containment emerged from traditional third parties. Yet a confluence of events in the early 1980s overcame any influence that OPS or physician-influenced plans (such as some Blue Shield plans) would have on cost containment. First, rising costs in and of themselves created incentives for employers to search for lower-cost health plans (Goldberg and Greenberg 1981). Second, the market power of some Blue Shield plans was reduced because of the entrance into the marketplace of third-party administrative-services-only firms, which, like Blue Shield, were not required to pay state insurance premium taxes. Third, the large increase in the number of health maintenance organizations and the resultant competition may have led to greater cost control by all third parties (Goldberg and Greenberg 1980). Fourth, the increased supply of physicians made it more likely that physicians would cooperate with health insurance firms that were more aggressive in cost containment. Finally, Federal Trade Commission investigations of Blue Shield resulted in reduced provider control of health insurance plans (FTC News Summary 1981).

Cost containment in Indiana

In Indiana, substantial cost containment occurred in dental services in the 1960s and 1970s. Unlike the Oregon physician services market in the 1930s and 1940s, however, cost containment persisted even in the presence of a provider-controlled plan in the marketplace.

Cost-containment efforts have been pervasive in dentistry since the formation of the first dental plan by the International Longshoremen's and Warehousemen's Union-Pacific Maritime Association in 1954 (ADA 1980: 1). This first plan was organized and financed by Delta Dental Plan, a not-for-profit plan sponsored by the dental profession. One reason for the profession's sponsorship was to ''project the voice of organized dentistry into the rapidly growing marketplace for prepaid dental programs, and thus assure the application of professional judgments in such critical matters as benefit design, scope of services provided, method of provider compensation, and cost and quality control mechanisms'' (Delta Dental Plan no date).

All dental insurers—including third parties such as Blue Shield and provider-controlled insurers such as the Delta Dental Plan—have actively engaged in cost containment using a combination of pretreatment review and alternative course of treatment (ACT) programs. Under pretreatment review the insurance carrier

1. U.S. v. Oregon State Medical Society, 343 U.S. 326, 336 (1952).

reviews for "necessity and appropriateness" a proposed treatment that is expected to cost in excess of a certain dollar value (Greenberg 1982). Under the ACT programs, dental consultants on the insurer's staff may suggest a less costly alternative to the work plan of the patient's dentist (Reisine and Bailit 1980). In addition, discussions between the insurer and the dentist, insurer inspection of x-rays, and even oral examinations of the patient by the insurer's dental consultant have been used as cost-containment techniques. There are also substantial copayments and deductibles for dental work (Greenberg 1982: 368).

In response to a perception that efforts by the Indiana Dental Association (IDA) to boycott insurer requests for x-rays could lead to antitrust challenges, the Indiana Federation of Dentists (IFD) was formed as a labor union in Anderson, Lafayette, and Fort Wayne in 1976. In fact, in 1979 IDA signed a consent agreement with the FTC which settled the allegations that it attempted to frustrate cost control efforts.[2] In assessing the intent of the dentists who formed IFD, it is worth noting a statement of the actions of IDA prior to its consent agreement with the FTC:

> The method of authorization of dental health care under prepayment plans should be limited to determining the eligibility of the patient and extent of liability of the plan and should prevent any interference with the dentist-patient relationship or with the judgment and decision of the dentist. The plan must not *require* the dentist to submit radiographs [x-rays] to a third party [emphasis in original].[3]

From this statement it is clear that the dentists opposed mandatory submission of x-rays. The following excerpt from the IDA manual takes the next step of instructing dentists not to cooperate with requests for x-rays:

> Dental radiographs [x-rays] are part of the dentist's legal health records. They are available for valid review by qualified representative(s) of your insurance company in this office. *Radiographs (x-rays) will not be submitted to third parties for their use in determination of benefits* (e.g., least expensive adequate procedure or optional course of treatment) because a determination of an adequate treatment plan can only be made after a knowledge of the following:
>
> A. complete patient evaluation
> B. radiographs
> C. additional diagnostic procedures are required [emphasis added].[4]

While prohibiting dentists from mailing x-rays to insurers, IDA left open the

2. 93 F.T.C. 392 (1979) (consent order).
3. 101 F.T.C. 57, 83 (1983).
4. *Id.*

opportunity for dentists working for insurers to visit dental offices to examine x-rays. This is clearly a much more costly procedure for the insurers and one which probably would make monitoring uneconomical.

A postcard survey mailed to IDA members in 1975 found substantial compliance with the IDA position:

> Although 811 members were getting requests for x-rays from insurers, only 133 were sending x-rays to the insurers. Of another 407 members who reported neither getting requests nor sending in x-rays, only 29 said they would do so if requested, while 378 said they would refuse.[5]

Several official IFD statements confirm that the organization's purpose was to continue to oppose scrutiny by dental insurers. For example, IFD adopted a "work rule" which contained the following statement:

> Proper diagnosis and treatment planning predicates the dentist correlating all diagnostic aids with a history and with all clinical findings. No one facet of this process is now, or ever has been recognized by the profession as a substitute for the complete process. To represent otherwise would subject the patient to sub-standard care.[6]

The boycott was apparently effective, as evidenced by the IFD leadership's feeling that "we don't anticipate any holdouts and have kept the retaliatory and economic pressures we could apply to non-members very low key and tried not to threaten any of our members."[7] Evidence from one major insurer, Connecticut General (CG), indicates some effectiveness: "The few Madison County dentists who did occasionally submit x-rays to CG during 1976–1977 frequently followed up with a phone call asking CG to make sure that nobody else knew that [x-rays] were in fact submitted."[8]

On 18 October 1978 the Federal Trade Commission issued a complaint against the Indiana Federation of Dentists, accusing it of a conspiracy to restrict dentists in Indiana from submitting dental x-rays to dental care insurers. The conspiracy was alleged to affect competition adversely among dentists and to deprive consumers of benefits which could accrue from cost-containment efforts by insurers.[9] The FTC's administrative law judge ruled against the IFD and ordered it abolished.[10] In addition, the judge ordered all dentists who were members to cease and desist from refusing collectively to submit x-rays to insurers and from enforcing this action through boycott.[11] On 17 February 1983 the FTC agreed with

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5. *Id.* at 93.
6. *Id.* at 119.
7. *Id.* at 120.
8. *Id.*
9. In re Indiana Federation of Dentists, complaint issued October 18, 1987, Docket 9118.
10. 101 F.T.C. 57 (1983).
11. *Id.*

the thrust of this decision and banned the offensive activities of IFD, but refused to order the dissolution of IFD.[12] The U.S. Court of Appeals for the Seventh Circuit vacated the FTC order on the grounds that the respondent's actions were not anticompetitive and that the FTC did not have sufficient evidence.[13] On 2 June 1986 the Supreme Court unanimously upheld the FTC position and overturned the verdict of the Court of Appeals.[14] The Supreme Court decision is unambiguous in its findings and thus is certain to have an impact on other instances in which medical providers attempt to impede the cost-containment activities of insurers. By supporting the active monitoring of dentists in this case, the court has signalled that organized provider opposition to insurance company cost-containment efforts will probably be successfully challenged in the courts. Providers will no longer be able to collectively boycott insurers who do not act in the best economic interest of the providers.

The limits of cost containment

Vigorous cost-containment activities by both public and private third-party payers are now common in both medicine and dentistry. For example, the Blue Cross and Blue Shield Association recently announced that it would no longer pay for unnecessary tests (such as chest x-rays) which are routinely performed upon hospital admission or prior to surgery (BCBSA 1987). In addition, six Blue Cross/Blue Shield plans have implemented prospective payment plans based on diagnosis-related groups (Greenberg 1986). At least fifty Blue Cross plans conduct one or more forms of health care utilization review (Greenberg 1985). In addition, more than 600 health maintenance organizations and more than 500 preferred provider organizations have built-in incentives for cost containment (Pickens 1986: xix). In dentistry, nearly all insurers offer pretreatment review and ACT programs (Reisine and Bailit 1980). It appears, therefore, that provider-controlled medical or dental insurance or provider boycotts may no longer be substantially hindering the extensive amount of cost containment practiced by third parties.

Despite these efforts, health care costs continue to rise faster than the rate of increase of all prices (New York Times 1987a). This is true both in the fee-for-service sector and in the prepaid areas of medical delivery (Newhouse 1985). There are several possible reasons for the increase in costs. First, there could still be imperfections in the insurance market that inhibit the vigorous monitoring of providers' costs in all areas of the United States. For example, Blue Cross and Blue Shield plans have had territorial restrictions on entering the territory of another Blue Cross and Blue Shield plan (Greenberg 1986). To the extent that Blue

12. *Id.*
13. Indiana Federation of Dentists v. Federal Trade Commission, 745 F.2d 1124 (7th Cir. 1984).
14. Federal Trade Commission v. Indiana Federation of Dentists, 476 U.S. 447 (1986).

Cross/Blue Shield may have tax and trademark advantages over commercial carriers, competitive pressures might be deflected. In addition, in some areas of the United States the market locality may be so small that the entry of HMOs or preferred provider organizations (PPOs) may not be feasible. Second, rising health care costs may be due to exogenous factors (such as increases in the costs of malpractice insurance) as well as rising real input prices. Recent data, however, suggest that malpractice insurance is not a large contributor to increases in costs; moreover, increases in real input prices are difficult to affect with cost containment efforts (Schwartz 1987). Third, health care costs may be due to other exogenous factors, such as increases in the size and average age of the population (ibid.). However, these factors have been discounted as major influences on higher costs in the recent literature (ibid.). Many have suggested that increases in health care costs are due to increases in technology (ibid.; Newhouse 1988). For example, Evans (1983) has suggested that approximately 50 percent of the increase in hospital per diem costs is due to the effects of technology. Schwartz (1987) has also estimated that the increase in technologic innovation and diffusion accounted for more than 50 percent of the increase in hospital costs between 1977 and 1983.

It should be recognized, however, that the relationship between rising health care costs, technology, and insurance is circular and that it is therefore difficult to ascertain precisely the extent to which rising costs are due to technology alone (Goddeeris 1984; Goddeeris and Weisbrod 1985). Increases in insurance may result in higher prices, increased services, and increased technological development. The ensuing result may again be an increased demand for insurance (Newhouse 1978). Recent empirical evidence suggests that medical price inflation stems from high levels of insurance, which induce high rates of product innovation and development (Newhouse 1988).

There are a number of examples of technological development. For example, more than 300 individuals are awaiting a heart transplant, a procedure with an average cost of $57,000–$110,000. More than 7,000 individuals await a kidney transplant, which costs $25,000–$35,000 (Washington Post 1987). Scitovsky's (1985) analysis of treatment of breast cancer and myocardial infarction between 1971 and 1981 shows large increases in the use of new and expensive technologies. Moreover, she reports a large increase in the percentage of women who have deliveries by the costly cesarean section method. According to Scitovsky, most of the recent increases in costs have come from these new and expensive technologies, not from ancillary services such as laboratory costs and x-rays.

It appears that the cost-containment constraints have changed since 1977. Providers hampered cost containment with the OPS plan and with the boycott of the dental insurers, but it now appears that overt provider resistance has faded.[15] In

15. There were three additional cases which suggested that further possible resistance would cer-

the future, the impact of new technology may be the main cause of the increase in health care costs. However, costs may increase less than would be the case if there were an absence of insurer cost containment, since insurers may reduce income to providers that would have resulted without such cost controls.

It will be difficult, however, for insurers to deny any procedures for which there is some positive benefit. For example, under its well-publicized policy, Blue Cross and Blue Shield will not pay for chest x-rays and routine EKGs which may be routinely performed on a hospital admission prior to surgery (BCBSA 1987). Nevertheless, if a physician can justify these procedures as having some positive benefits, Blue Cross will agree to pay for them.[16] Third-party cost containment efforts have also been stymied when there is a possibility of some marginal benefit. A recent case study documented that visits to a physician to check blood pressure could not be denied reimbursement, since the individual had a secondary condition which had a slight probability of increasing the risk from high blood pressure (Goldberg and Greenberg 1982).

Because of advancing technology, it appears that more often insurers may have to confront procedures which are medically efficacious (those for which benefits are positive) but economically inefficient (those for which benefits are less than society's opportunity cost) (Schwartz and Joskow 1978).[17] Can insurers deny potential benefits, no matter how small, to an individual when the true opportunity cost of a procedure to society as a whole may exceed the potential benefits (Fuchs 1986)?

Wickline v. California

The recent case of *Wickline v. California* appears to suggest that third parties will have no legal choice but to allow procedures or tests to be undertaken as long as there are benefits for the patient.[18] In this landmark 1986 ruling, the California Second District Court of Appeals determined that if third parties denied a patient necessary care, the third party can be held liable if the patient is subsequently harmed by the decision. A careful examination of *Wickline* reveals the limitations that third parties, regardless of their structure and behavior, may have

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tainly violate the antitrust law. In In re Michigan State Medical Society, 101 F.T.C. 191 (1983), the FTC ruled that a boycott by that society against cost-containment efforts of third-party payers and Medicaid was a violation of Section 5 of the FTC Act. In In re Association of Independent Dentists, 100 F.T.C. 518 (1982) (consent order), the association agreed to drop its threatened boycott against third-party payers. In In re Texas Dental Association, 100 F.T.C. 536 (1982) (consent order), the association agreed to refrain from boycotting x-ray submissions to dental benefit programs.

16. Telephone interview with Charlotte Crenson, director of public affairs, Blue Cross and Blue Shield Association, 10 April 1987.

17. The dilemma between medical efficacy and economic efficiency existed before recent increases in technology. We believe that recent changes in technology have exacerbated this dilemma.

18. Wickline v. California, 192 Cal. App. 3d 1630, 239 Cal. Rptr. 810 (1986).

in cost containment, and the potential cost-increasing effects of new technology and additional procedures.

Wickline involved a public agency, the California Medicaid program (or Medi-Cal), which attempted to contain costs by refusing to authorize a request by the attending physician for eight additional days in the hospital for the patient, Lois J. Wickline. Wickline had been admitted to Van Nuys Community Hospital for surgery for circulatory and vascular problems; when she developed complications, an additional stay of eight days was requested. After discussion with the consulting physician, a Medi-Cal utilization review nurse denied the full request and ordered that only four additional days in the hospital be granted. Wickline subsequently developed an infection in her leg which resulted in amputation. Wickline sued Medi-Cal for disallowing the extra four days in the hospital, although she declined to sue her attending physician. The court clearly found that the third party could be held responsible for denying payment to patients when there are additional benefits from physician care, even though costs may exceed benefits to the individual.

According to the court, the nature of these benefits is derived from the "usual standards of medical practice in the community."[19] The court also referred to "medically inappropriate decisions" as those which would not meet the proper standard of care.[20] There was no reference to cost-benefit analysis or economics in the court's decision. Rather, the court stated, "While we recognize, realistically, that cost consciousness has become a permanent feature of the health care system, it is essential that cost limitation progress not be permitted to corrupt medical judgment."[21] In the specific case of Wickline, however, the court ruled against the patient, finding that Medi-Cal's decision was justified by the body of prevailing medical opinion.

It appears that *Wickline* will make it difficult for third parties to contain costs when there are some medical benefits to be gained from additional treatment. Society must be prepared to confront those advances in technology which may yield a positive but relatively small benefit. Under current circumstances, antitrust suits which focus on interference with third-party cost containment ought to affect only a small proportion of the increases in health care costs in relation to the implementation of new and expensive technology.

Given its benefits, how can society curtail expenditures on new technology? One way to curb expenditures might be to challenge the standards of *Wickline* such that insurers could not be held liable in cost containment if some potential medical benefits were denied. This category might include individuals who may have only a few days to live yet are put into expensive intensive care units. Of

19. *Id.*
20. *Id.* at 28.
21. *Id.* at 29.

course, many hospitals do not provide additional care for individuals who are comatose and have no chance to recover (New York Times 1987b). A second method might be to make greater use of copayments and deductibles (Manning et al. 1987). A third alternative might be to explicitly ration such capital-intensive therapies as cancer chemotherapies, long-term dialysis, or intensive care units—therapies which are currently rationed in Great Britain (Schwartz and Aaron 1984). A final alternative is to allow health care costs to continue to rise at a rate greater than inflation. If this were to happen, fewer resources would be available for other goods and services which society (but not the very sick patient) might value more highly. Of course, another possible alternative might be some combination of the first four suggestions.

Conclusion

The success of the *Indiana Federation of Dentists* litigation appears to have muted most of the overt provider opposition to third-party cost containment. Although they may still occur, anticompetitive provider behavior and antitrust violations may now be less of a barrier to containing rising health care costs than is the adoption and diffusion of new technology. The future challenge will be much more vexing as we confront the successes of new technology and decide to what extent health care should or should not be delivered on a cost-benefit basis.

References

American Dental Association. 1980. *Dental Prepayment*. Chicago: ADA.

Blue Cross and Blue Shield Association. 1987. Guidelines on Diagnostic Testing Will Lead to Cost Savings, Better Patient Care. Chicago: BCBSA.

Delta Dental Plan. No date. *Delta and the Dentist: Questions That Dentists Ask About Dental Service Corporations*. Chicago: Delta Dental Plan.

Evans, Roger W. 1983. Health Care Technology and the Inevitability of Resource Allocation and Rationing Decisions. *JAMA* 249: 2047–57.

FTC News Summary. 1981. F.T.C. Issues Policy Statement on Physician Control of Medical Prepayment Plans. 16 October, p. 2.

Fuchs, Victor R. 1986. Has Cost Containment Come Too Far? *Milbank Quarterly* 64: 479–88.

Goddeeris, John H. 1984. Medical Insurance, Technological Change, and Welfare. *Economic Inquiry* 22: 56–67.

Goddeeris, John H., and Burton Weisbrod. 1985. What We Don't Know About Why Health Expenditures Have Soared: Interaction of Insurance and Technology. *Mount Sinai Journal of Medicine* 52: 685–91.

Goldberg, George A., and Warren Greenberg. 1982. Third Party Cost Containment and the Physician-Patient Relationship. *Journal of Community Health* 7: 215–30.

Goldberg, Lawrence G., and Warren Greenberg. 1978. The Emergence of Physician-Sponsored Health Insurance: A Historical Perspective. In *Competition in the Health*

Care Sector: Past, Present, and Future, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

———. 1980. The Competitive Response of Blue Cross to the Health Maintenance Organization. *Economic Inquiry* (January): 55–68.

———. 1981. The Determinants of HMO Enrollment and Growth. *Health Services Research* (Winter): 421–38.

Greenberg, Warren, 1982. Provider Influenced Insurance Plans and Their Impact on Competition: Lessons from Dentistry. In *A New Approach to the Economics of Health Care*, ed. Mancur Olson. Washington, DC: American Enterprise Institute.

———. 1985. *An Analysis of Hospital Utilization Review Efforts with Special Concentration on the State of Maryland*. Bethesda, MD: Key Communications.

———. 1986. The Evolution of Blue Cross in a Competitive Marketplace. *Business and Health* (November): 44–47.

Manning, Willard G., Joseph P. Newhouse, Naihua Duan, Emmett B. Keeler, Arleen Leibowitz, and M. Susan Marquis. 1987. Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment. *American Economic Review* (June): 251–77.

New York Times. 1987a. Medical Care Cost Rose 7.7% in '86, Counter to Trend. 9 February, p. 1.

———. 1987b. Hospital Panel to Order Policy on Ending Care. 5 June, p. 1.

Newhouse, Joseph P. 1978. The Structure of Health Insurance and the Erosion of Competition in the Medical Marketplace. In *Competition in the Health Care Sector: Past, Present, and Future*, ed. Warren Greenberg. Germantown, MD: Aspen Systems.

———. 1988. Has the Erosion of the Medical Marketplace Ended? *Journal of Health Politics, Policy and Law* (elsewhere in this issue).

Newhouse, Joseph P., William B. Schwartz, Albert P. Williams, and Christina Witsberger. 1985. Are Fee-for-Service Costs Increasing Faster than HMO Costs? *Medical Care* 23: 960–66.

Pickins, Ed, ed. 1986. *Directory of Health Maintenance Organizations*. Bethesda, MD: American Medical Care and Review Association.

Reisine, S. T., and H. L. Bailit. 1980. History and Organization of Pretreatment Review, a Dental Utilization Review System. *Public Health Reports* 95: 282–90.

Schwartz, William B. 1987. The Inevitable Failure of Current Cost-Containment Strategies. *JAMA* (9 January): 220–24.

Schwartz, William B., and Henry Aaron. 1984. Rationing Hospital Care. *New England Journal of Medicine* (5 January): 52–56.

Schwartz, William B., and Paul Joskow. 1978. Medical Efficacy versus Economic Efficiency: A Conflict in Values. *New England Journal of Medicine* 299: 1462–64.

Scitovsky, Anne A. 1985. Changes in the Costs of Treatment of Selected Illnesses, 1971–1981. *Medical Care* 23: 1345–57.

Washington Post. 1987. Transplants: Who Lives? Who Decides? 20 January, p. 17.

Managed Competition of Alternative Delivery Systems

Alain Enthoven

Abstract. The markets for health insurance and health care are not naturally competitive: they are susceptible to many forms of market failure. Health plans and consumers may use strategies that lead to inequity and inefficiency. But experience with successful models of competition suggests that tools are available to enable sponsors (active collective agents on the demand side who contract with health plans to structure and manage competition) to use competition to achieve a reasonable degree of efficiency and equity for their sponsored populations. All this implies a more complex, dynamic, and sophisticated view of competition than one usually finds in apologia for free markets. A free market is not possible in health insurance.

Ten years ago there was lively debate in Washington over how the government should act to control growth in health care expenditures. The code words of the opposing camps were "regulation" and "competition." "Regulation" meant federal or state price controls on doctors and hospitals, certificate-of-need laws regulating investments in plants and equipment, and publicly mandated controls on the use of services, such as utilization review by professional standards review organizations. "Competition" did not have one single meaning, even among economists: various schools of thought favoring diverse ends and means were marching under that banner.

In fact, competition and market forces in health care financing and delivery can produce a great variety of outcomes, depending on the legislative and institutional framework within which they operate. For example, they might strip away the traditional cross-subsidies in health insurance from the healthy to the sick and in hospitals from the insured to the uninsured. This outcome would be likely if the market were composed largely of "limited provider" health care financing and delivery plans competing to serve cost-conscious buyers. Such plans would seek to control costs in part by driving hard bargains with providers, leaving hospitals with little or no surplus revenue for uncompensated care. If one health plan sought to generate surplus revenue at the expense of one group in

Research for this article was supported by a grant from the Henry J. Kaiser Family Foundation. The author gratefully acknowledges the foundation and the assistance of Pauline Burton, Gregory Vistnes, and Nancy Wilson in the preparation of this article.

order to subsidize another, another health plan could attempt to underbid it and take away the profitable account.

Competition and market forces might also roll back the percentage of health care expenses covered by insurance. This would be likely to occur if individuals were given a choice of insurance plans—some with low deductibles and high premiums, others with high deductibles and low premiums, with those choosing the latter allowed to keep for themselves the difference in premiums. Those not expecting medical costs would choose the high deductibles; those anticipating substantial medical costs would choose the low deductibles. The premiums on the low-deductible policies would be driven up to approximate the expected medical costs of the most costly members of the group; thus low-deductible insurance would probably be driven out of the market.

Alternatively, competition and market forces might fuel the "medical arms race" in which hospitals, competing for doctors and their patients, seek to equip themselves with the latest and best in medical technology. This scenario would occur in the context of our traditional fee-for-service third-party reimbursement system, which allows free choice of providers. In this system there is little or no cost consciousness on the demand side of the market for health services and therefore no *price* competition (which is generally what economists mean by the word "competition").

Thus competition and market forces cannot be said to be unequivocally benign institutions from all points of view. Their proponents must have had something more precise in mind. What *I* have defined as "competition" in past writings is a carefully designed and managed system of universal health insurance based on cost-conscious consumer choice and price competition among alternative health care financing and delivery plans (Enthoven 1978). My designs were intended to use competition and market forces to direct the health care system toward equity and efficiency (terms which I define below). In other words, I have not advocated everything that is called "competition." I have also emphasized that we cannot have a completely free market in health insurance (Enthoven 1980).

My use of the word "competition" was appropriate, however, because one of the foundations of the reforms proposed by the "procompetition school" with which I have been associated was breaking up the system characterized as "guild fee choice" (Weller 1984) and replacing it with a system of limited provider plans (such as prepaid group practices, individual practice associations, network-model HMOs, and preferred provider insurance) engaged in price competition to serve cost-conscious consumers. Nevertheless, in view of the wide range of outcomes such competition might produce, clarification and more precise terminology are needed.

In particular, I believe it is necessary to draw a clear distinction between proposals to create a free market in health care financing and delivery—proposals which, in my view, cannot achieve efficiency and equity—and a system of managed competition designed to guide the health care financing and delivery systems

toward those goals. The purpose of this paper is not to refight the old "competition versus regulation" debate of the 1970s. Rather, its purpose is to clarify what will be necessary if the group buyers of health care—government and employers—want to use competition to create incentives that promote quality and economy in the organization and production of health care services.

Managed competition defined

In a free market composed of health care financing and delivery plans on the supply side and individual consumers on the demand side and without carefully drawn rules and active management by sponsors, health plans would be free to pursue profits or survival using numerous competitive strategies that would destroy efficiency and equity and that individual consumers would be powerless to counteract. These strategies would include selection of preferred risks, market segmentation, product differentiation that raises the costs of comparing products, discontinuity in coverage, refusal to insure certain individuals or exclusion of coverage for treatment of preexisting medical conditions, biased information regarding coverage and quality, and erection of entry barriers.

But experience with successful models of competition among health plans suggests that tools are available to enable sponsors to use competition to achieve a reasonable degree of efficiency and equity for their sponsored populations. Sponsors are active collective agents on the demand side of the market who contract with competing health plans and continuously structure and adjust the market to overcome its tendency toward failure and inequity. A sponsor assures each eligible beneficiary of financial coverage of health care expenses at a reasonable price. The sponsor is the ultimate guarantor of coverage, although it may share risk with health plans. In a competitive model the sponsor serves as the broker who structures the coverages, contracts with the beneficiaries and health plans regarding the rules of participation, manages the enrollment process, collects premium contributions from beneficiaries, pays premiums to health plans, and administers cross-subsidies among beneficiaries and subsidies available to the whole group. In the United States, sponsors are mainly employers, labor/management health and welfare trusts, the Health Care Financing Administration, and state governments.

The essence of managed competition is the use of the available tools to structure cost-conscious consumer choice among health plans in the pursuit of equity and efficiency in health care financing and delivery. The market in a system of managed competition should be viewed not as merely two-sided but as three-cornered, including consumers, health plans, and sponsors. Health plans integrate the financing and provision of care. (For a more detailed and technical exposition of these ideas, see Enthoven 1988.)

The goal of managed competition is to reconcile equity and efficiency, at least to a reasonable degree. By "equity" I mean that a just and humane society can

define a minimum standard of medical care that should be available to all its members—essentially all the costworthy medical care that can effectively prevent or cure disease, relieve suffering, and correct dysfunction. (By "costworthy" I mean that marginal benefits equal marginal costs for persons of average incomes.) Denial of anything that meets that standard is morally unacceptable. Care above that standard can be considered a discretionary luxury. No person should be denied the minimum standard of care because he or she cannot pay, and no person should be subjected to great financial hardship to pay for care.

Health insurance is appropriately understood as social insurance and not as casualty insurance. Its purpose is not merely to protect individuals against unexpected variations in their own medical expenses; its purpose is also for the well to share in the cost of care of the sick and for the economically self-sufficient to share in the cost of care of the poor, so they may be assured of access to the decent minimum. The element of cross-subsidy is essential. The market-determined distribution of income alone cannot produce an equitable distribution of health care. However, justice does not demand that everybody have exactly the same system and style of care. (I will explain below that efficiency in the competitive process may demand that sponsors limit the extent of product differentiation in coverages.) Advocates of complete egalitarianism fail to recognize that there are legitimate differences in priorities and tastes.

I believe that the existence of cost-conscious consumer choice is necessary to create incentives for health plans to develop and demonstrate less costly alternative ways of organizing care of acceptable quality. There is nothing unethical about a substantial degree of economic responsibility for health care choices, especially on the part of the economically self-sufficient.

An efficient allocation of health care resources is one that minimizes the social cost of illness, including its treatment. This is achieved when the marginal dollar spent on health care produces the same value to society as the marginal dollar spent on defense, education, consumption, or other uses. Relevant costs include the suffering and inconvenience of patients as well as the resources used in producing care. This goal should not be confused with minimizing or containing health care expenditures. A lower percentage of GNP spent on health care does not necessarily mean greater efficiency—it may mean that costs have been shifted to patients by delaying or denying care.

Because of the many special characteristics of medical care, I do not believe that anything like perfect efficiency is attainable. But I do believe a system can be designed that will motivate providers to pursue efficiency and achieve it to a reasonable degree. Efficiency has generally been ignored in the design of institutions to finance and deliver health care services, both in the United States and elsewhere. However, as costs increase and as the number of costly alternative technologies grows, it is becoming increasingly important to design institutions that will motivate the pursuit of efficiency. If we do not, we will not be able or willing to pay to achieve equity.

Market failure

The markets for health insurance and health care are not naturally competitive. Deregulation will not make them competitive. In a free market made up of health plans on the supply side and individual consumers on the demand side, without carefully drawn rules and without active management by sponsors, health plans would be free to pursue profits or survival using competitive strategies that would destroy efficiency and equity. Market failures can also result from sponsor behavior and from the behavior of consumers. Here I will explain these problems; in the next section I will discuss tools sponsors can use to correct them.

Risk selection. The most prominent feature of health care coverage markets in which individuals have a choice of plan is that "health risks" or expected medical costs may be distributed unevenly among the different plans (biased selection) and achievement of a favorable selection may be very advantageous to an insurer. Biased selection may result from insurer action, consumer action, or the interaction of the two as insurers manipulate consumers' choices.

If an insurer must quote one premium to all members of a group and if it can influence the composition of the group, the insurer will find it advantageous to clude from the group people with relatively high expected costs. This will permit the insurer to make a greater profit, or to offer a lower price if there is competition. For example, the RAND Health Insurance Experiment found that in a given year, 28 percent of the population's health care expenses were associated with 1 percent of the patients (Newhouse et al. 1981). Thus it could be extremely advantageous for a health plan to identify that most costly 1 percent of its membership and persuade them to disenroll. Many techniques exist for selecting risks, and some are very subtle. The range of available techniques becomes much more extensive in the case of limited provider plans. Newhouse (1982) and others have hypothesized that discrimination against the sick in the form of underservice and pressure to disenroll would be encouraged by such competition.

In extreme cases, competition among health plans may lead to cancellation of coverage or refusal to renew a policy, producing widespread lack of coverage concentrated among many of the people who need coverage most. If not constrained to insure a whole group for the same premium, insurers may seek to divide each group into subgroups with higher and lower costs and charge separate premiums to each subgroup. Alternatively, a different insurer might contract with each subgroup. The process of subdividing groups could theoretically lead to completely segmenting the market to the level of individual risks (Rothschild and Stiglitz 1976; Pauly 1984). One result would be inequity. In the absence of action to the contrary, the sick would pay the full expected costs of their care.

Biased risk selection can also occur as the result of opportunistic risk selection by patients who switch plans from year to year because of changes in expected medical needs. Because so much surgery is elective with respect to its timing,

patients have ample opportunity to play this game. This can lead to instability in the marketplace as adverse selection drives up the cost of the more comprehensive coverages (e.g., policies with low or no deductibles).

How this all plays out would depend on any specific rules present and the specific circumstances involved. But a free market of health plans and individual consumers is likely to be characterized by some combination of high premiums and poor coverage for the sick (high deductibles, exclusions, and unavailability of insurance) and/or discrimination against the sick.

Segmentation and product differentiation. Health care coverage does not naturally come in a simple, clean, comprehensive package that can be easily compared with other packages. There are endless possibilities for differentiating one package from another. Besides being used as a tool for selecting risks, benefit package design can be used to segment the market to avoid price competition and to differentiate the product in ways that make price comparisons very difficult. A market of competing health plans is particularly easy to segment because health care is largely provided locally—for example, only four or five HMOs conveniently serve the residents of Palo Alto. If there were many competitors, competition would be more likely in most segments. Such segmentation can be characterized as catering to different "bundles" of tastes, and therefore may increase utility. But it comes at the expense of price competition, and may therefore reduce efficiency.

Information cost. At best, health care coverages are complex and difficult to understand, evaluate, and compare. Insurers can make it worse if they are free to do so. It is difficult to write contract language that cuts cleanly through the ambiguities of medical need and practice, and this fact can impair the efficiency of the market. If the sponsor does not contract for coverages that are easily compared, people will find it costly in terms of their own time to achieve a sufficient understanding of the different plans offered to be able to choose with confidence. When they find an alternative that seems satisfactory, they will be deterred from considering other alternatives by the "information cost."

Discontinuity of coverage. In a free market, insurers would seek to drop coverage of people with chronic diseases as soon as their contract period expired or to raise the price of coverage to reflect the patient's new condition. The latter would create an equity problem; the former would create discontinuity of coverage. Some insurance plans have tricky "air pockets" of exclusions (such as no automatic coverage of newborns) that consumers do not notice until they are in need. Discontinuity interacts with risk selection. Some might propose to deal with this problem by requiring that insurers offer long-term contracts with a guaranteed annual right to renew. But if insureds who acquire chronic conditions are

not also guaranteed the right to enroll with other insurers, they are denied an annual choice of health plan and competition to cover them is destroyed.

"Free riders." As experience in the free market segment of the U.S. health care economy shows, a free market is likely to lead to the noncoverage or undercoverage of large numbers of people. Insurers do not want to insure people with greater-than-average risks at the same price as those with average risks, and some people with below-average risks do not want to buy insurance at prices appropriate to average risks. Many of those with below-average risks will go without insurance in the belief that if they become really sick, someone will take care of them. This belief is reasonable, since there are public providers of last resort. Thus, if permitted to do so, many consumers will seek a "free ride" and wait until they are sick to buy insurance. The possibility of setting premiums on the basis of the expected medical costs of different classes of individuals (risk rating) has not solved this problem. Insurers are thus forced to adopt elaborate strategies to prevent free riders, including performing medical reviews of applicants and excluding coverage for care of preexisting medical conditions. In fact, most insurance companies have withdrawn from the market for individual unsponsored coverage. What remains is poor coverage at high prices.

Entry barriers and oligopoly. The presence of even several health plans in an area does not guarantee that competition will be lively. The market may be segmented, or a "live and let live" pattern may evolve. Potential entrants in a given market may perceive that the costs of entry are high because to succeed they would have to take patients away from established HMOs and not just from the unorganized fee-for-service sector. Even if several health plans are present, each of them might contract equally with most or all the providers in town, thus creating little economic competition at the provider level.

In sum, as critics of the competition idea point out, many serious failures would be likely to occur in a market made up of health plans and individual consumers unprotected by rules and unaided by sponsors.

Tools sponsors can use to counteract market failure

The reasons for market failure are many and powerful. Considering these circumstances, it is not unreasonable to wonder whether any kind of competitive market that includes individual consumer choice is possible. Nevertheless, we have seen large group buyers such as the Federal Office of Personnel Management, the state of California's Public Employees' Retirement System, the University of California, Stanford University, and a number of large industrial employers structure workable models of competition and manage them successfully, some for more than 25 years. Since economists have been described as people who seek to prove that what works in practice can also work in theory, it would

seem appropriate for an economist to seek to explain how these successful practical examples have come about. My hypothesis is that these large group buyers or sponsors *manage* competition, using tools they have found to counteract market failure. Economic analysis can be used to elucidate the tools and to suggest others that might be developed to make the market work to produce equity and efficiency. The following section is an inventory of such tools.

Pricing. The perverse incentives in biased selection occur because the insurer cannot charge each insured a price equal to the latter's true expected medical costs (plus administration) because of institutional requirements on the insurer, private information known to insureds but not available to insurers, or both. An important part of the successful management of this problem is attenuating the incentives for biased selection by instituting a system of accurate pricing. In the extreme, one could imagine a sponsor soliciting from each health plan a competitive bid for a year's comprehensive care for each insured after allowing each health plan to inspect the insureds' medical records and physically examine each insured. Then, for example, the sponsor could offer to pay the price of the low bidder on behalf of each insured, leaving it to the insured to decide whether he or she wanted to pay the extra cost to join a higher-priced health plan. Of course, the transaction costs of such individual pricing would be enormous, so practical sponsors and insurers adopt approximations that fall far short of that extreme.

The general term for these approximations is "risk rating." Risk rating identifies persons or groups by certain characteristics that help predict medical expense, then sets a price for insuring people in each subgroup. Risk rating can be used to accomplish two important goals. First, the incentive to discriminate against the sick can be reduced by allowing the plans to charge higher prices for the care of people in categories with greater predicted costs. Second, inequity can be avoided by tying the sponsor's contributions to the costs in each category, thus protecting the sick from higher costs. Such a system does not have to be even close to perfect to be workable, especially when used with other incentives and contractual provisions that I will describe.

The largest system of risk rating now in operation is the Medicare HMO/Competitive Medical Plan (CMP) option under Section 1876 of the Social Security Act. Medicare beneficiaries are grouped by age, sex, and county of residence; by welfare, institutional, and disability status; and by presence of end-stage renal disease. The HMO of the beneficiary's choice is paid an amount similar to what a beneficiary of similar characteristics would have cost Medicare under the fee-for-service system. Participating HMOs or CMPs must charge all beneficiaries the same price for the same benefits. The system was created to protect the government from adverse risk selection, but its most important benefit is that it gives health plans an incentive to serve older and sicker beneficiaries. Various critics are now finding that there has been some risk selection against the government despite these risk adjustments (Eggers 1980; Eggers and Prihoda 1982). This

formula is no more than a first approximation. Better predictors of resource use can and should be developed.

Recent research has shown that although the variables in the Medicare capitation formula are statistically significant, they explain only about 1 percent of the variance in individual medical expenditures (Lubitz et al. 1985). One reason for this high unexplained variance is that a great deal of cost is concentrated in high-cost episodes that can strike members of any age group. This fact suggests to me that we will need payment schemes more complex than pure capitation based on variables determined *ex ante*. One of the important implications of managed competition is that once one conceives of the market as three-cornered, with sponsors brokering the payments between consumers and health plans, it becomes easier to conceive of more elaborate systems of payment than could occur in transactions between consumers and health plans. These more complex payments can be administered behind the scenes by experts in the sponsor organizations and health plans, and need not involve the consumers. I am now inclined to believe that a hybrid pricing scheme involving "demographic capitation," indemnity payments for certain high-cost episodes or diagnoses, and postdiagnosis high-risk capitation would be more precise than Medicare's initial risk-rating system, and that such a scheme will probably become necessary. In the Medicare system, such a payment scheme could be tied to hospitalizations and prospective payments in the most costly diagnosis-related groups. As Newhouse (1986) observed, "Although some worry about excessive fee-for-service utilization . . . others worry that pure capitation will produce underutilization. If both worries are justified, a blend of the two should produce an appropriate amount of utilization." Put another way, the idea of competition need not be identified with the capitation method of payment that is based exclusively on variables determined *ex ante*.

Standardized benefit packages. I have mentioned the issue of benefit packages in the contexts of risk selection, product differentiation, and market segmentation. The simplest and most effective way to prevent benefit packages from being manipulated for these purposes would appear to be for the sponsor to contract with all the competing health plans to cover exactly the same standard package of basic health services, and possibly even to require the same schedule of copayments, if any. This would make coverages easy to compare. I believe these reasons create a strong presumption in favor of standardization, but there are also valid reasons for departing from a standard package. For example, a sponsor might want to let a health plan offer an innovative benefit that was attractive to some members of the covered group, a benefit which was not seen as selecting preferred risks but which the other health plans were unwilling to offer (coverage of chiropractic services would be an example). The bottom line on this issue is that through the contracting process, the sponsor should control and adjust the

benefits of the covered population and not allow the health plans to select the coverage they offer for purposes of risk selection and segmentation.

Annual enrollment process. Successful employment-based multiple choice systems (like the Federal Employees' Health Benefits Program) have an annual enrollment period that is managed by the sponsor. The beneficiaries deal with the employee benefits office, and the benefits office notifies the health plans which employees have enrolled in which plans for the coming year. Usually employers manage the contacts between employees and health plans. There are several advantages to this procedure, one of which is to deprive health plans of a tool for selecting risks. Direct interaction between a health plan's sales representative and a potential subscriber in the process of enrollment gives the health plan an opportunity to ask questions about health status and to discourage enrollment of the chronically ill. Sponsor management of the process enables the sponsor to structure side-by-side comparisons that facilitate informed choice. In the context of the annual enrollment process, the sponsor can gather and publish information that facilitates comparison and improves consumer understanding.

Continuity of coverage. Disenrollment can be as important as enrollment in the selection of risks. Sponsors must manage the process to prevent health plans from "dumping" bad risks. Contracts should be written to assure that subscribers can keep their coverage through the contract year and allow them to renew it in subsequent years. Contracts should also provide for automatic coverage of newborns to prevent health plans from avoiding the risks of neonatal care. Indeed, continuity of coverage is an important goal beyond its implications for risk selection, and should be a basic requirement for all health care coverage contracts.

Surveillance by sponsors. The general understanding between sponsors and health plans reflected in contracts between them should be that health plans will participate equitably in covering the sponsor's entire group of beneficiaries, that they will seek to provide quality care economically, and that they will not inappropriately select risks or segment the market. In matters so complex, there is no such thing as a perfect contract. Enduring business relationships in the private sector are usually built on understanding and trust. Sponsors should monitor the performance of health plans, watch for signs of inappropriate risk-selecting behavior, and take corrective action when necessary. Sponsors must be free to use judgment based on reasonable but less-than-conclusive evidence. Graduated responses should be available to sponsors, short of termination of entire contracts. For example, sponsors should be able to freeze new enrollments if a health plan is doing a poor job.

Quality assurance. Some aspects of the quality of care and service can be judged adequately by individual patients and their families. But some very im-

portant aspects, such as whether effective medical care makes sick patients better, are statistical matters that can only be judged on the basis of the experience of large populations. This is an undeveloped area of research, but one in which large sponsors have a much better chance than unaffiliated individuals to develop or obtain the data needed to evaluate quality.

Even without sophisticated quality measures, complaints can inspire the employee benefits manager to confer with the health plan about ways to improve service. There are several things (short of refusing to renew the contract) that the benefits manager can do about a health plan giving poor service, including warning beneficiaries about patterns of complaints and suspending all new enrollments in a plan or all new enrollments in a particular area or category (e.g., in an area where service appears poor). Ultimately, to be effective in negotiating for quality improvements, the sponsor must be free not to renew the contract without being tied up in court for years.

The subject of quality assurance is too complex to be discussed in detail here, but I will mention a few key points. First, a competitive market will not automatically produce high-quality care, especially to the extent that the market is characterized by poor information about quality. Suppliers to a competitive market seek to produce what the purchasers want. If the purchasers do not measure and demand good-quality care, there is little reason to expect that they will get it. Unfortunately, it is hard for consumers to judge the technical quality of care. The great majority do not repeatedly experience major episodes of care that might help them to become experienced consumers. Consumers need information and help in judging which providers produce good outcomes and which do not; thus, quality evaluation is an appropriate role for sponsors.

Second, a sponsor must have data if it is to do a good job of quality evaluation. Public-sector sponsors also need data to satisfy demands for accountability in the use of public funds. Data are costly to collect, provide, and interpret. Each demand should be justified on its own merits, with benefits balanced against costs. But if sponsors are buying a service, they have a responsibility to determine what it is they are buying and whether their beneficiaries are receiving what they were promised.

Procompetitive action by sponsors. Sponsors so inclined can act to encourage entry of new competitors if they consider the existing degree of competition to be inadequate. A group of employers could together invite an HMO company to open a branch in their area and could promise support in the enrollment process. Such invitations influenced Kaiser-Permanente's decision to enter several markets.

Sponsor management of subsidies. A key role of the sponsor is to subsidize the consumer's purchase of coverage by a contracting health plan. For example, the federal government contributes a fixed sum to each of its employees' purchase

of coverage from a participating health plan. As described earlier, Medicare contributes fixed payments on behalf of beneficiaries who choose to join contracting HMOs; these payments are based on variables related to the beneficiary's expected costs. These subsidies can be managed to achieve several purposes.

First, subsidies can be used as a tool to motivate universal coverage within the sponsored group. Usually, having some coverage is not optional in the sense that individual members of the group cannot take the money the sponsor would contribute to their health plan membership and spend it on something else. For example, many employers offer a substantial subsidy that is usable only as a contribution towards the premium of a contracting plan, thus giving even the healthy an incentive to be insured. In addition, the sponsor may provide for automatic enrollment in the lowest-priced plan for all eligible group members who do not choose some other option. In other words, such a subsidy can be a powerful disincentive to "free riding."

Second, access to the subsidies can be used to motivate health plans to contract with the sponsor and abide by the contractual terms. If the subsidy is available only for enrollments in contracting health plans, the only way health plans can reach the market that the sponsored beneficiary population represents is by participating in the system of managed competition.

Third, sponsor management of subsidies can send correct economic signals to health plans and consumers. For example, the sponsor's contribution on behalf of individuals in each risk class should be a fixed dollar amount that is independent of the plan chosen. If someone wants to enroll in a more costly plan, he should be expected to pay the full additional cost. Health plans in competition should be allowed to charge people in each risk class the amount they consider necessary to cover their cost, including return on capital, of serving people in that risk class. Health plans should thus be economically neutral with respect to enrollments of high-risk and low-risk people.

Fourth, sponsor management of subsidies can achieve the goal of equity. As explained earlier, in a free market people with chronic disease would find themselves paying (through premiums or out-of-pocket) the extra costs associated with their illness. Health plans would want to charge each person a premium sufficient to cover his expected medical cost, plus administrative cost and profit. Such a system would produce inequity. Yet as explained earlier, allowing health plans to charge more for caring for predictably sicker people is probably necessary to prevent discrimination against the sick and to remove an important incentive for risk selection. Sponsors can resolve this conflict by adjusting the subsidies to the predicted need of each class of beneficiary. The sponsor should seek to set the subsidies so that the absolute difference between the price of the lowest-cost acceptable plan in each risk class and the sponsor contribution is the same. Then the price paid by the enrollee (at least to join that plan) is the same whether he has high or low predicted medical costs. Thus, a central idea of managed competition is to shift the locus of cross-subsidies of the sick by the well from the

health plans and hospitals to the sponsors. In a competitive system, health plans and hospitals cannot be expected to cross-subsidize, because to the extent that they try to charge low-cost patients more in order to subsidize high-cost patients, other health plans and hospitals would offer lower prices to cover or care for low-cost patients, thus removing the source of the subsidies.

In sum, if large buyers have the motivation, freedom, and understanding to use all these tools and to develop new ones, it seems reasonable to suppose that an efficient and equitable health care system would evolve to serve sponsored populations. But such results will not occur automatically. This is not a market in which the "invisible hand" will do the job. Some "visible hands"—sponsors—must manage the demand side to make the market achieve desirable results.

Sponsors

The concept of managed competition places a heavy burden on sponsors. Who are the sponsors who are equipped to carry this burden? The ideal sponsor would be well equipped for the tasks discussed above and would be motivated solely by the goal of getting the highest-quality health care possible for the beneficiaries within the funds available.

The main sponsors in the United States today are federal and state governments, large employers, unions, and labor/management health and welfare trusts. The federal government sponsors Medicare beneficiaries, federal employees and their dependents, and various other population groups. State Medicaid programs sponsor those eligible for Medicaid. There is a great deal of ideology on both sides of the question of whether the public sector or the private sector ought to do the sponsoring—and if it is to be the public sector, whether it should be a responsibility of the federal, state, or local government. The record is mixed. The ideal sponsor does not exist. There is much room for innovation in developing institutions for this purpose.

Public sector agencies are often criticized for their inflexibility, for their requirements to treat everyone equally and with due process (thus eliminating the ability of management to use judgment), and for their procurement laws. Elected officials in the executive and legislative branches are vulnerable to provider pressures backed by campaign contributions. Government is also often criticized for the short-term orientation of its elected leaders and for substituting symbolic manipulation for real reform (Mayhew 1974). Moreover, government is often an unreliable business partner; it must sometimes make sudden budget cuts and break contracts in response to changes in public mood.

Despite these problems, the record of the U.S. public sector as sponsor includes examples of good performance. Medicare's HMO option has the most accurate and refined risk-rating system in operation, and its design also includes other features of a good managed competition model. (This is not to minimize the need

for a better payment formula.) For many years, the Federal Employees' Health Benefits Program and the similar health benefits plan of the state of California's Public Employees' Retirement System have been among the best-designed and most successful examples of competitive health coverage systems. Both could certainly benefit from design improvements, but overall they have been successful in offering beneficiaries a range of cost-conscious choice, in encouraging new health plans to enter their markets, and in managing to moderate many of the problems I have identified as threats to a successful competitive model.

Reliance on private-sector employers as sponsors has both advantages and limitations. Private-sector employers have a direct economic incentive to purchase health benefits that will attract employees and/or satisfy unions for the lowest price possible. Both the goal of good employee relations and the antidiscrimination provisions of the Internal Revenue Code motivate many employers to treat regular employees equitably. In fact, one of the main barriers to the pursuit of efficiency in the U.S. health care economy is that the combination of the incentives in the Internal Revenue Code and previous open-ended commitments to defined benefits made years ago when health care costs were much lower have led more than half the employers to persist in employer-pay-all arrangements that effectively deprive employees of any incentive to make economical choices among health plans. A limit on the amount of employer contribution that can be tax-free to the employee would help improve both efficiency and equity (Enthoven 1984). One of the most important advantages of relying on private-sector employers is that it decentralizes decisionmaking about what services will be covered and to what extent. This could encourage responsible, cost-conscious choice of covered benefits that are responsive to local needs and preferences, if it were not offset by the tax incentives. It allows for market testing new ideas. For example, should health insurance cover chiropractic? Better to let the local group that is going to use and pay for it decide than to let it be fought out in a distant legislature which does not necessarily have to pay the bill for its decision.

On the other hand, most private employers are too small and lacking in resources to do the job I have outlined. Employers lack interest in continuity of coverage; they exclude coverage for preexisting conditions and they drop coverage for employees who leave the group unless forced to maintain it by law or a collective bargaining agreement. Some employers manipulate the system for short-term advantages—for example, by seeking to dump bad health risks onto community-rated HMOs. Most employers, even large ones, are oriented toward short-term profits. The priorities of their managements have to be in their own product markets, not in promoting the health of employees. Many benefits managers have a poor understanding of health issues. And long-term issues of health economics can easily be subordinated to politics within unions and between employers and unions. While we have some fine examples of large employers as sponsors, even devoted private-sector advocates must admit that most employers

in the United States have a long way to go toward achieving the role of the ideal agent for the health care of employees.

There is a need for innovation in sponsor institutions and in public policy to guide private-sector sponsors in socially responsible directions. For example, in 1986 Congress required employers to offer employees the opportunity to maintain coverage even after they lost membership in the employment group. Some people may be concerned that making employer cross-subsidies explicit would motivate companies to avoid hiring or to dump older employees. But most companies either have experience-rated insurance or self-insure, so they have been paying the extra costs of older, sicker employees for years. While discrimination against the sick has occurred, it has not been severe. In addition, the federal government subsidizes the coverage of employed people through the tax system. Various proposals have been made to modify the form of these subsidies in the interests of efficiency and equity (Enthoven 1984). If discrimination against older employees because of health care costs becomes a serious concern, a corrective policy would be to implement a system of risk-rated federal subsidies to everyone's health insurance. In other words, rather than subsidizing the insured's coverage on the basis of his employer's contribution and his marginal tax rate, as is the case today, the federal government could subsidize coverage using factors analogous to Medicare's adjusted average per capita cost factors.

In theory, a managed competition system could be sponsored by public- or private-sector sponsors or by some form of public/private partnership. In Consumer Choice Health Plan (CCHP), I proposed that the system be managed either entirely by the federal government or by the states acting under federal standards, as the provinces do in Canada (Enthoven 1978). In part, this was because CCHP was a response to President Carter's promise to establish a national health insurance system. I attacked the present job-related system of health insurance in the U.S. on a number of grounds—it excludes millions of people, adds greatly to the costs for new health plans to enter a market, and adds greatly to administrative cost and complexity (Enthoven 1979). It is possible to imagine systems of universal health insurance in which people belonging to large private-sector employment groups would continue to get their coverage through their employers while others would obtain their coverage through state-sponsored agencies. In any event, careful thought about the structure and motivation of sponsor agencies is appropriate. In this market, good results depend as much on the demand side as on the supply side.

Conclusion

This description of the complex and subtle tasks that must be carried out by sponsors in a system of managed competition might lead some to conclude that it is all too complicated for either the public or the private sector. Indeed, these

concepts appear to be beyond the present level of understanding of many public officials and benefits managers concerned with purchasing health care services. But these complexities are not peculiar to the competition strategy. Such problems as allocating resources equitably (including motivating providers to not discriminate against the sick) and motivating efficiency in the production of services exist in any system of health care financing and delivery. Alternative approaches such as the British and Canadian systems may appear to outsiders to be simpler and to avoid the subtleties of pricing and contracts. But the same problems of equity and efficiency exist in these systems and either have to be addressed by management or be ignored.

Moreover, all the tools of managed competition I have described are being applied somewhere. To manage competition effectively, a suitably motivated sponsor should attempt to combine the best aspects of Medicare's prospective payment system, Medicare's HMO/CMP option (described in Section 1876 of the Social Security Act), California's Public Employees' Retirement System, the Federal Employees' Health Benefits Program, and the practices of some of the best private employers. There are significant problems of implementation, but none of these suggestions are exotic or impractical. The advantage of an approach based on the competition of comprehensive care organizations is that there is good evidence that if properly structured, it can achieve a substantial improvement in efficiency without sacrificing equity.

References

Eggers, P. 1980. Risk Differential Between Medicare Beneficiaries Enrolled and Not Enrolled in a HMO. *Health Care Financing Review* 1 (3): 91–99.

Eggers, P., and H. Prihoda. 1982. Pre-enrollment Reimbursement Patterns of Medicare Beneficiaries Enrolled in At-Risk HMOs. *Health Care Financing Review* 4 (1): 55–74.

Enthoven, A. 1978. Consumer Choice Health Plan. *New England Journal of Medicine* 298: 650–658, 709–720.

———. 1979. Consumer-Centered vs. Job-Centered Health Insurance. *Harvard Business Review* 57 (1): 141–52.

———. 1980. *Health Plan: The Only Practical Solution to the Soaring Cost of Medical Care*. Reading, MA: Addison-Wesley.

———. 1984. A New Proposal to Reform the Tax Treatment of Health Insurance. *Health Affairs* 3 (1): 21–39.

———. 1988. Theory and Practice of Managed Competition in Health Care Finance. Presented as one of the Professor F. de Vries lectures, North Holland.

Kenney, J. 1985. Using Competition to Develop a Buyer-Driven Market. *Business and Health* 2: 39–42.

Lubitz, J., J. Beebe, and G. Riley. 1985. Improving the Medicare HMO Payment Formula to Deal With Biased Selection. In *Advances in Health Economics and Health Sciences Research*, vol. 6., ed. R. Scheffler and L. Rossiter. Greenwich, CT: JAI Press.

Mayhew, D. 1974. *Congress, The Electoral Connection*. New Haven, CT: Yale University Press.

Newhouse, J. 1982. Is Competition the Answer? *Journal of Health Economics* 1 (1): 109–16.

———. 1986. Rate Adjusters for Medicare Under Capitation. *Health Care Financing Review* (Annual Supplement).

Newhouse, J., W. G. Manning, C. N. Morris, L. L. Orr, N. Duan, E. B. Keeler, A. Leibowitz, K. H. Marquis, C. E. Phelps, and R. H. Brook. 1981. Some Interim Results From a Controlled Trial of Cost Sharing in Health Insurance. *New England Journal of Medicine* 305 (25): 1501–1507.

Pauly, M. 1984. Is Cream-Skimming a Problem for the Competitive Medical Market? *Journal of Health Economics* 3: 87–95.

Rothschild, M., and J. Stiglitz. 1976. Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information. *Quarterly Journal of Economics* 90 (4): 629–49.

Welch, W. P. 1987. *Medicare Payments to HMOs: Urban Core Versus Suburban Ring*. Washington, DC: The Urban Institute.

Weller, C. D. 1984. Free Choice as a Restraint of Trade in American Health Care Delivery and Insurance. *Iowa Law Review* 69 (5): 1351–91.

Halfway Competitive Markets and Ineffective Regulation: The American Health Care System

Stuart H. Altman and Marc A. Rodwin

Abstract. Since the late 1960s the U.S. has attempted to develop a strategy for controlling the rate of growth of health care spending. During the 1970s this strategy relied heavily on various forms of regulation. Some regulatory programs were partially successful in moderating spending increases, but they generated significant opposition—particularly from powerful provider groups, who successfully convinced Congress and the states to dismantle most of the regulatory structure and to substitute various forms of competitive approaches to controlling spending. Some of these competitive strategies have been successful in increasing the efficiency of subsections of our health system. But they too have produced "losers," and the government has been pressured to enter the system to minimize their losses. The net result has been a political stalemate between halfway competitive markets and ineffective regulation. With the rate of health care spending growth near historic levels, it is likely that the 1990s will bring a return to a stronger role for government regulation. But it is unlikely that we are any more willing to tolerate the negative fallout from regulation today than we were in the 1970s, and therefore we predict that the proportion of GNP going to health care will continue to grow throughout the remainder of this century.

A decade ago there was a perceived need to control medical care spending, which was increasing at a rate one-third faster than the gross national product (Waldo, Lent, and Lazenby 1986). There was a consensus among health care analysts that this spending did not provide equivalent benefits. Experiments with capitated forms of financing delivery of medical services, such as health maintenance organizations (HMOs) had shown that the use of resources (principally hospitals) could be reduced and personnel used more efficiently with no apparent ill effects on patient care (Enthoven 1978). In addition, sociological and other studies of health suggested that public health measures, personal lifestyles, and social and environmental conditions were in many respects more significant determinants of aggregate health than use of medical services.

Marc Rodwin's work on this article was funded by a grant from the Pew Memorial Trust.

At the time, Altman and Weiner (1978) characterized the use of regulation to contain medical inflation and real growth in the medical sector as a "second-best" alternative, one that was necessary—if not desirable—because of the nature of medical care and the way it was financed. Regulation was needed because market forces could have only a marginal impact on medical spending at best. The ineffectiveness of market forces was due to the existence of extensive insurance coverage, which made patients largely unresponsive to costs and to government subsidies of insurance and medical education; this in turn artificially increased the demand as well as the supply of medical services. Other factors also made sole reliance on market mechanisms inappropriate. Patients do not behave like ordinary consumers; they depend on physicians to make crucial choices. And physicians, because of their training and their role as patient advocates, tend to do as much as possible for their patients. While much has changed in the medical care sector, these characteristics have not.

A factor present a decade ago which has since changed is that organized buyers of medical services (such as commercial insurance companies and Blue Cross and Blue Shield plans) either lacked sufficient market power to require hospitals and physicians to limit their costs or did not use it. With no significant checks, these institutional and organizational arrangements promoted extraordinary growth in the medical sector and corresponding increases in expenditures. However, neither planning nor regulation as typically practiced were very successful in controlling the expanding medical care sector in the face of strong opposing incentives for key actors to continue their existing behavior. Since 1977, even these modest attempts at regulation have been sharply cut back. Several states that had rate-setting programs have eliminated them; others, including New York, have made them less restrictive.

In the last decade incentives, markets, and competition have been used more often than regulation. For example, private insurers, in part pushed by their large corporate clients, have used a variety of means (including some reduction in medical insurance coverage) to effect change in the medical care market. These changes have been significant and have generally increased efficiency. Yet despite the increased use of market forces, the medical care sector is still not a competitive market—rather, it is characterized by "halfway" markets. Government shapes the context within which markets function, both by supporting them and by keeping them under rein. While the delivery of medical care is overwhelmingly private, government at all levels directly finances more than 40 percent of this care and indirectly subsidizes the rest through various tax incentives. Government also structures market activity through various forms of regulation—some that promote and others that constrain or halt the market's activities. Government's involvement in medical markets is so ubiquitous that much of it is taken for granted, even by advocates of market competition.

The halfway character of medical markets and regulation reflects our indecisiveness about two approaches to social policy. Government regulation and

competitive markets are alternative ways to allocate medical services, control cost and quality, and choose social priorities. Each method has its loyal adherents. Those who favor competitive markets believe that liberty and the public good flow from private sector and individual initiatives with decentralized decision-making and a limited role for government. Those who favor tighter government control believe that liberty and the public good stem from democratic control and collective self-determination (Vladeck 1981). However, because of the nature of the American political system and the special characteristics of the medical care sector, neither of these approaches has been able to prevail. We seem to lack the political will to have either a competitive market system or an effective government regulatory approach. Instead, we vacillate between the two approaches. We allow some markets to exist, but insist that the government structure and monitor their performance. If the market does not provide a solution acceptable to powerful interest groups, political pressure is brought to bear for government to do something—and it often does.

There is no doubt that government intervention limits market activities. If we view efforts individually and consider only the short run, regulation often distorts markets. But viewed in a larger, longer-run context, regulation can often promote and foster markets. For example, licensing professionals reduces consumer uncertainty over the quality and nature of medical service. Consumers can assume that the practitioner is competent, which lowers their information costs. This assurance makes patients more willing to avail themselves of medical services, particularly in new or unknown areas. In this respect licensing, and many other seemingly restrictive regulations, promotes markets. To the extent that regulations limit choice, they are like budgets that allow market activity but make it subject to contraints. Such restrictions on particular market activities preserve the institution of the market.

However, two of the most sought-after features of markets—competition that reduces price and budget constraints that control spending—are notably absent or diminished in medical markets. Regulations that raise minimum standards contribute to the lack of price competition. But there are more fundamental distortions that prevent the optimum functioning of medical markets. Many people believe that medical care is a special service that should be allocated largely based on need (Fein 1986). The uncertainty and risk of many medical problems prompt patients to demand extra precautions in diagnosis and treatment, and the physician's ethic promotes the same tendency. Given the complexity and ambiguity of medicine, it is always possible to expend further resources in precaution, diagnosis, or treatment. Further, the presence of extensive insurance makes patients and providers much less sensitive to prices. Therefore, there is rarely a reduction in the demand for medical services when prices rise; neither do providers lower their prices when faced with greater competition.

These characteristics of the halfway competitive markets and ineffective regulation in medical care have fueled the growth of medical expenditures, which

continue to grow at rates that far exceed the growth in national income. In this evaluation we will elaborate on why neither increased competition nor conventional government regulation can succeed in controlling medical care spending. Although tough budget regulation can control spending, it would force the country to face many difficult distributive choices and to incur substantial social costs—choices and costs which the country has preferred to avoid (Blendon and Altman 1987).

The limited effects of increased competition in controlling medical care spending

In the last decade the public and private sectors have employed three market approaches to controlling medical care spending (Meyer 1983). One strategy focused on the role of consumers, increasing the prices they pay and their choice of insurance policies. Another strategy relied on HMOs and other alternative delivery systems that compete with traditional providers. A third strategy used the market power of organized purchasers of medical services to demand more favorable payment arrangements.

Insurance and consumer copayments. Prompted by studies showing that consumers reduce utilization of services when they bear a share of the costs, insurers and employers sought to make consumers more cost-sensitive (Newhouse et al. 1981). Insurance companies designed policies that made more frequent and extensive use of deductibles and copayments, thereby requiring patients to pay more from their own pockets for each service (Hewitt Associates 1984). Some employers subsidized only the least expensive insurance plan as a benefit and required employees to pay the additional expense if they chose a more expensive plan. Another option permitted employees to decrease their medical insurance coverage and to use the savings for other forms of fringe benefits. These changes reversed a fifty-year decline in the percentage of medical expenses paid by patients at the time of care (Waldo, Lent, and Lazenby 1986). But despite these changes, more than 70 percent of all medical expenditures are still reimbursed by public and private third-party payers (Gibson and Waldo 1984).

What is most striking about these consumer incentives is that they have been restricted to a rather narrow corridor, usually at the high-cost end of the market. This produces competition of sorts, but not the kind that occurs for most other services or products where options range from inexpensive to expensive. The new market incentives only promote competition between high-quality benefit packages or delivery systems and higher-quality services and benefits. Such competition does little to reduce the expense of basic coverage, and it may even encourage the market to sell policies that carry additional protection. Since insurance policies still largely insulate patients from most costs, the increased use of consumer incentives has at best only a marginal effect on resource utilization or expenditure control.

True competitive markets have not been allowed to develop in health insurance because Americans do not want to significantly decrease their insurance coverage. Employees generally want greater benefits rather than lower costs. They express this preference both through their choice of insurance policies and through the political process. Furthermore, a significant majority of the public supports the idea of government extending medical insurance to the approximately 35 million Americans who lack coverage (Sykvetta and Swartz 1986). Many provider groups also support such reforms because they are currently forced to pick up or shift the cost of uncompensated care to other payer groups, a task that is becoming harder as competition and regulation reduce the flexibility of providers to set their own charges (Etheredge 1986).

Recent legislation has supported the trend towards increased insurance. Federal legislation passed in July 1986 requires employers to keep former employees enrolled in their group insurance policies for up to three years at cost, provided that the former employee pays the premium.[1] Congress is close to passing legislation that would have the federal government provide expanded Medicare coverage for catastrophic acute medical care, including prescription drugs.[2] Other legislation introduced in the 99th Congress would require employers to provide a basic level of health insurance for all their full-time employees and cover all citizens against the high cost of long-term care.[3] Several states (such as Massachusetts) are considering various systems of universal medical insurance coverage.[4] Whatever the outcome of these proposals, in the future there will probably be more rather than less medical insurance in the United States, and we are likely to see a resumption in the long-term downward trend in the percentage of medical expenses paid directly by the patient.

HMO competition. The HMO strategy has also had limited success in reducing overall medical care spending. HMOs have been able to reduce their own costs by cutting down the number and duration of hospitalizations (Luft 1984), but only a small portion of these savings have been reflected in lower medical care spending overall. Some of the HMO savings from reduced hospitalization have been offset by increased utilization of outpatient services, because HMOs typically include more outpatient benefits than traditional insurance does (Luft 1985). They do so because the public generally prefers HMOs that offer extensive services over HMOs with low premiums. In addition, federal and state governments require HMOs to provide certain benefits.

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1. Consolidated Omnibus Reconciliation Act of 1986, 29 U.S.C. § 1161 (1986).
2. Medicare Catastrophic Loss Prevention Act of 1987, H.R. 2470, 100th Cong., 1st Sess. (1987).
3. Minimum Health Benefits for All Workers Act, S. 1265, 100th Cong., 1st Sess. (1987).
4. An Act Establishing the Massachusetts Health Partnership, S. 1690 (1986). An Act to Make Health Care Available to Citizens of the Commonwealth and to Make Certain Other Improvements in Health Care Delivery Systems in the Commonwealth, H. 6000 (1987).

As a result of those more extensive benefits, many HMOs have costs that are higher than traditional insurance and must therefore charge premiums that are above those of competing commercial or Blue Cross insurance. Even HMOs with lower costs often keep their premiums close to traditional fee-for-service plans (Luft 1985). HMOs are not compelled to underbid traditional insurers by a large amount in order to create an incentive for consumers to switch. Moreover, HMOs often prefer to compete for customers by using marketing strategies and by offering additional services, lower copayments, or better location rather than lower premiums.

Some of the ways HMOs compete appear to have shifted costs among payers and increased total spending for medical care. There is evidence that some HMOs are marketing themselves to encourage a favorable selection of patients—that is, patients for whom care is less costly on average (Wilensky and Rossiter 1986; Butler et al. 1987). They offer services (such as well baby care and sports medicine) that attract young and generally healthy people; they locate in neighborhoods that are middle class; and they do not cater to people who have high-cost illnesses or are in high-risk groups. Consequently, fee-for-service insurers are often left with the patients who have high utilization rates and who require expensive care. Group insurance is usually experience-rated, so employers pay the full costs for these employees. But since employers do not benefit proportionately from their lower-utilization employees who join an HMO, their total medical insurance expenses are higher (Etheredge 1986; Luft 1985).

While there was some initial evidence that the presence of HMOs in a market lowered the costs of competing providers, more recent evaluations suggest otherwise. A recent study of HMOs across 25 standard metropolitan statistical areas between 1971 and 1981 found that competition, as measured by degree of market penetration, had no significant impact in reducing overall hospital costs (Merrill and McLaughlin 1986). Another study of HMOs in Hawaii, Rochester, and Minneapolis/St. Paul concluded that the overall reduction in hospitalization was most plausibly attributed to factors other than HMO competition (Luft, Maerki, and Trauner 1986). A third study of the impact of HMOs in Minneapolis/St. Paul between 1977 and 1982 concluded that the decreased use of hospitals could not be attributed to HMOs since it paralleled national trends (Johnson and Aquilina 1986). And a fourth study of the Twin Cities' marketplace for medical care concluded that in the 1979–1981 period HMO competition had no effects on hospital costs per admission (Feldman et al. 1986). It does not seem reasonable, therefore, to rely solely on HMO competition to significantly reduce the overall cost of medical care in the future.

Prudent purchaser programs. Faced with increases in their expenditures for medical care, large firms that self-insure and insurance companies have embarked on their own cost-containment campaigns (Sullivan and Ehrenhaft 1984). Whereas in the past insurers paid bills as they received them, they now are active purchasers deciding which expenses to reimburse. In general, the strategies used in

prudent purchaser programs are similar to those used by government. The private sector has experimented with HMOs and other alternative delivery systems such as preferred provider organizations (PPOs) and with awarding contracts on the basis of competitive bidding. They have used their purchasing power to demand more favorable terms of payment and greater provider efficiency. But ironically, the most significant change is that payers are becoming involved in "managing" the delivery of medical care—an activity similar in character to regulation.

One example of such private-sector regulation is the use of preadmission certification programs. Under these programs patients do not receive the full benefits of their insurance policy for inpatient care or outpatient surgery unless their physician seeks and receives prior approval from the insurer. Insurance companies have also developed protocols for common diagnostic tests. When physicians order tests that do not fit the protocols, the insurance company does not reimburse them. Such utilization review programs build on the experience of Medicare's professional standards review organizations (PSROs). Some limited evidence suggests that a well-operated program can save between 8 and 10 percent of total premium dollars (Gertman 1987).

Another way the private sector regulates payment is through administered contracts (Goldberg 1976). Purchasers establish detailed rules, standards, and procedures to monitor providers as part of their contracts for the delivery of the services. Purchasers now also ask providers to supply them with data on utilization rates, medical outcomes, and details of their medical practices. Some firms have issued requests for proposals to prospective providers that include detailed specifications of the kind of practice, medical outcomes, and services they want.[5]

A final way prudent purchaser programs achieve savings is by obtaining more favorable terms of payment. Because large insurers or groups of insurers indirectly purchase large volumes of services, they have been able to extract discounts from providers. Providers grant such discounts because they expect that purchasers will channel more patients to them; the smaller profit margin per patient or service is compensated by the guarantee of a larger market share.

These private-sector initiatives have been successful in adding much-needed incentives for a change in medical practice. However, in total they have not had a significant bearing on total spending for health care. It is also important to remember that much of this new market activity by private firms could not have come about without two important government interventions. First, in the late 1960s and early 1970s the federal government established programs to increase the number of physicians (Wallack 1981). The ready availability of large numbers of new physicians who are willing to work in new types of delivery systems or who are willing to accept tougher payment schedules has permitted many of the prudent purchaser programs to function. Second, PSROs and the new profes-

5. Honeywell is an example of a corporation undertaking such a program.

sional review organizations (PROs) have provided important data on utilization and methods of monitoring provider performance.

Competition and market reforms in perspective. Although the growth of market competition has brought and will continue to bring a measure of increased efficiency in the delivery of medical care, spending will not be substantially reduced. Due to the halfway nature of markets that exist in the medical care sector, increased competition will not produce savings as great as those that are realized when market competition is more robust. Markets sometimes force producers to compete over price, but most often they compete in other ways. Moreover, efficiency gains in the provision of medical care do not always result in reduced spending for purchasers.

An important limitation of all the market competition strategies used to control spending is that there are many significant forces increasing expenditures other than the inefficient use of medical services (Schwartz 1987). These forces are unaffected by any efficiency gains produced by market competition. Among these cost-generating forces are a growing population; the increasing size of the oldest age cohort, which uses more medical services and long-term care; the increasing medicalization of social problems; and, in the future, the growing AIDS epidemic.

That medical care spending has not abated during the last decade can be seen in Figure 1. In the period 1976–1987, medical care spending increased by almost 80 percent above the level of inflation. This growth also far exceeded the growth in the country's national income (as measured by GNP). In 1976, medical care spending stood at 8.5 percent of GNP; by 1987, it had grown to 11.2 percent. The figure also shows that the rate of growth in real spending (the slope of the cumulative growth line) was relatively stable from 1979 to 1983. In 1984, there was a small but noticeable decline in the growth rate, reflecting in part the impact of the more aggressive behavior of private payers and the federal government. However, the cumulative growth rate resumed its pre-1982 level in 1985 and continues to follow that pattern today.

A similar picture emerges from an analysis of the spending levels for hospital care (Table 1). Prior to 1983 and the start of the Medicare prospective payment system (PPS) and many of the prudent purchaser programs of private corporations and insurers, total revenues (spending) for all hospital services were increasing at a rate of 7.3 percent after adjusting for inflation. This was the average annual rate during the 1976–1982 period. On a per admission basis, the annual average growth in spending was 5.2 percent. The first three years after 1982 were marked by a significant downturn in the growth in total spending for all hospital care, particularly 1984 and 1985. But in 1986 this downturn was reversed, and in the last two years spending levels appear to be close to pre-PPS levels. Much of the reduction was the result of a drop in hospital inpatient admissions, as can be seen

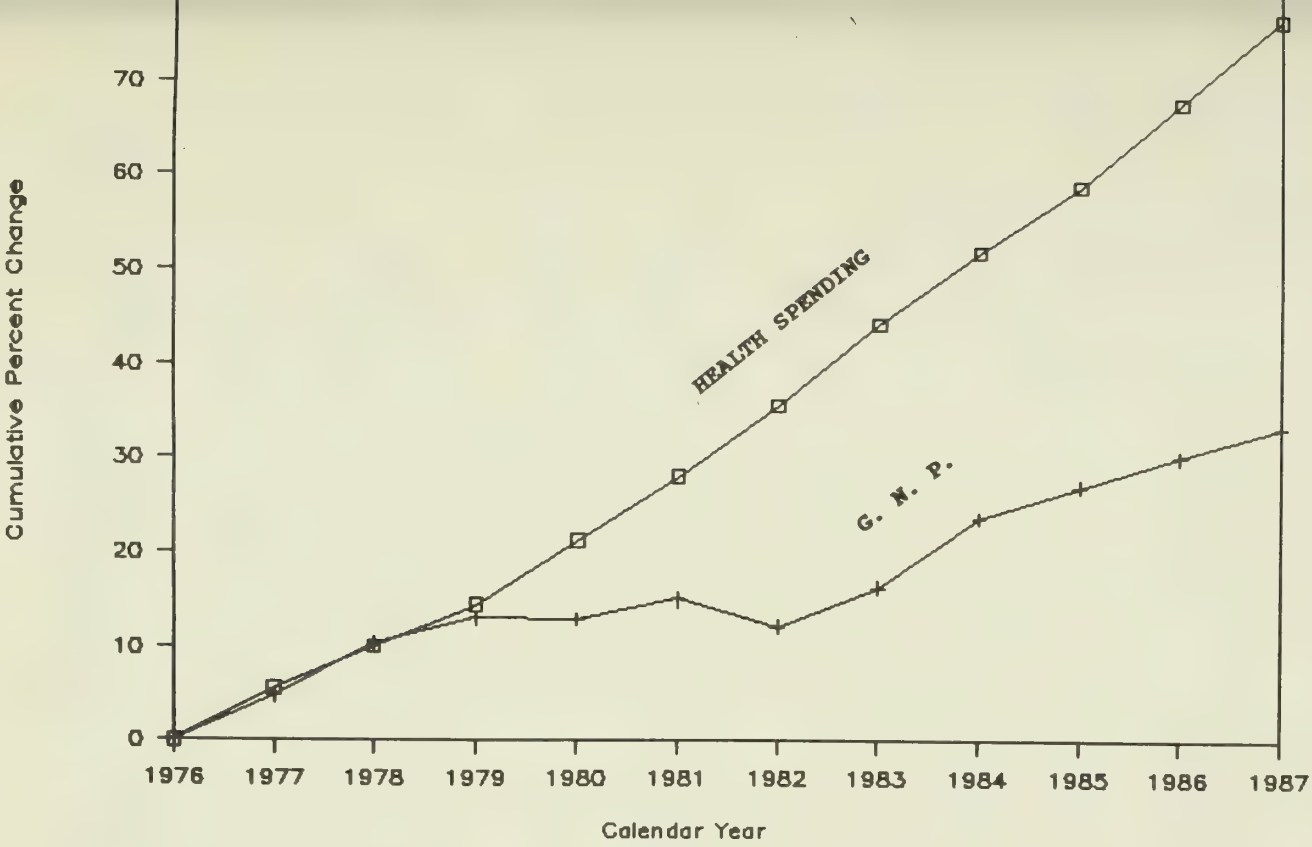

Figure 1. Growth in Health Spending and GNP, Adjusted for Inflation

Source: Prepared by the staff of the Prospective Payment Assessment Commission, Washington, DC, Spring 1987.

Table 1. Percent Change in Hospital Revenues, 1976–1987 (Adjusted by the Consumer Price Index)

Year	Total Revenues	Inpatient Revenues	Outpatient Revenues	Other Revenues	Inpatient Revenues Admission	Outpatient Per Visit
1976	13.6	13.9	17.2	−0.1	10.2	13.5
1977	9.2	9.2	12.8	0.3	6.4	6.3
1978	4.7	4.0	8.2	8.9	3.6	7.7
1979	2.3	2.1	3.0	5.4	−0.6	3.4
1980	3.7	3.7	5.1	−0.4	0.9	2.0
1981	7.7	7.1	9.5	13.3	6.3	8.0
1982	9.6	9.5	11.3	6.7	9.5	10.1
Average increase 1976–1982	7.3	7.1	9.6	4.9	5.2	7.3
1983	6.8	6.4	11.0	2.2	7.0	8.0
1984	1.7	0.3	9.3	3.8	4.2	7.8
1985	2.4	0.0	14.3	8.5	5.1	9.3
1986	6.7	4.9	15.8	2.8	7.1	6.7
1987[a]	6.3	4.7	13.3	9.8	5.5	7.2
Average increase 1983–1987	4.8	3.3	12.7	5.4	5.8	7.8

a. Estimate based on the first ten months of 1987 compared to the first ten months of 1986.
Source: American Hospital Association National Panel Survey. Prepared by the staff of the Prospective Payment Assessment Commission, Washington, DC, Spring 1987.

by the relative stability in the growth in spending per admission and the sizable increases in the growth in real spending for hospital outpatient care.

Regulation as a strategy for controlling spending

In the previous section we explained why market processes alone have not and cannot bring about substantial control over medical care spending in the current American economic and political environment. Will government regulation do any better? We do not think it likely. This is because our halfway markets in medical care limit the effectiveness of regulation as well as competition. As a general rule, we have not allowed our regulatory system sufficient authority over the levers of spending to be effective in controlling total medical expenditures.

Health planning and regulation. The regulatory approach of the 1970s was implemented by a network of planning bodies called health systems agencies (HSAs) which were established by federal legislation. Their aim was to control the formation of expensive new capital projects, such as the building or renovation

of a hospital and the purchase of new equipment costing more than $150,000. No new major hospital expansion or capital expenditures were permitted without a state-approved certificate of need.

From the beginning, HSAs were severely constrained by their lack of direct control over hospital reimbursement and the state regulatory apparatus. At the state government level, HSAs had to contend with organized opposition from hospitals and other providers that had more resources and better trained staffs and that were waging a single battle while each HSA fought many. In contrast to the concentrated interests of providers, the HSAs represented the diffuse interests of consumers and HSA board members, who were unaccountable to the public (Marmor and Morone 1980). The combination of these factors tilted the outcome of political fights against effective regulation.

Conflicts over the goals of health planning also made it difficult to control spending. HSAs had a broad planning agenda. Some groups wanted to control costs; others wanted to improve access to medical care; still others wanted to expand and improve institutions. The multiplicity of goals made the pursuit of spending control difficult and gave additional ammunition to providers who opposed controls. Providers could always reasonably argue that important goals were being thwarted by regulation and then find ways to get around the most restrictive provisions.

The closest the federal government came to giving any public agency control over the reimbursement of medical care institutions was during the period of the economic stabilization program (ESP) from 1971 to 1974. Even then the control was over what hospitals and physicians could charge for their services, not what they could spend. Nevertheless, ESP was successful in limiting spending for hospital care. Just prior to the ESP period, hospital costs per admission grew by 11.2 percent; during ESP the growth rate slowed to 8.5 percent. After Congress ended the control program in 1974, hospital and total medical care spending returned to pre-ESP levels (Altman and Eichenholz 1976).

Regulations that increase costs. Not only did government regulations established in the 1970s fail to control spending effectively, but they also often contributed to increased costs by raising standards, by ensuring quality and safety, or by promoting social justice. The attentive public responded to this kind of regulation—which is often beneficial—not only by accepting it, but by clamoring for more.

The extent of such regulation is enormous. State laws require insurers to maintain a minimum amount of reserves to pay beneficiaries. They can also prohibit the sale of any policy that does not have rate structures, benefit packages, and prices they approve. For example, medical insurance for a particular disease (such as cancer) is often disallowed on the grounds that it takes advantage of people's fears and does not provide useful protection. States license physicians, nurses, and other practitioners, and government funding for education helps regulate en-

try into these professions. Rules of legal liability require negligent practitioners and institutions to pay damages. Medical experimentation must conform to a special review process. Hospitals must afford doctors procedural due process before terminating their privileges. And new drug and medical devices must be approved by the Food and Drug Administration before they can be marketed.

A host of other regulations are directed not just to the medical sector but to all business. For example, the employment relationship is bound by rules protecting collective bargaining, providing unemployment benefits, establishing minimum wages and maximum hours of work, and prohibiting child labor and preferential treatment on the basis of race or sex. Also, just as other businesses do, medical providers must comply with laws governing commerce (such as the Uniform Commercial Code), property law, and laws regarding the sale of securities, insolvency, and the rights and obligations of the business owners.

Rate-setting regulation. Government regulation failed to control spending in the 1970s not because regulation can never work but because the form of regulation used did not account for or use financial incentives and because there was insufficient political consensus for enforcing effective regulation (e.g., rate setting). Yet there is evidence that rate setting can be effective in controlling hospital spending. In a comparison of medical expenditures from 1976 to 1984 between six rate-controlled states and the rest of the nation, Schramm et al. (1986) reported that there was an 87 percent larger increase in expenses per hospital admission in unregulated states than in regulated states. If savings are calculated by the reduction in inflation from the national average, the six states saved approximately $8 billion. The annual per capita hospital expenses in the six rate-control states showed increases of 33 percent for the period 1972–1976, while the growth rate in the nonregulated states was 38 percent.

New York State in particular has demonstrated that when a political body really faces a serious fiscal crisis it can create and administer an effective medical care spending control program (Schramm 1986). For several years, New York brought down the growth rate of medical care spending. But without the spur of its fiscal crisis, it is doubtful that even New York would have been able to muster the political consensus required to implement such a program.

Prospective payment as partial budget regulation. One innovative form of budget regulation is Medicare's prospective payment system, which uses financial incentives and allows providers latitude in managing their resources. However, the driving force of PPS is not consumer choice but government, which manipulates reimbursement to get hospitals to change their practice patterns. PPS is closer to an administrative price scheme than to either price control or a competitive market (Ginsburg 1987). Under PPS, government establishes a payment rate for each diagnosis-related group (DRG), leaving the hospital and physician

to decide how to manage resources. Hospitals therefore have a financial incentive to use resources in a more parsimonious manner.

PPS has produced significant short-run improvements in medical practice and utilization. Hospitals have developed management information systems, evaluated their expenditure patterns more carefully, economized in their use of resources, and shortened the average length of patient stay. Numerous procedures that were performed in hospitals in the past are now done on an outpatient basis, a change that health planners advocated for years without success. But while this system has produced reductions in the spending rate for inhospital care, much of these savings have been used to finance more outpatient and home health care. Further, as shown in Table 1, the most recent data show that even hospital inpatient costs are beginning to approach pre-PPS levels.

PPS is a prime example of regulation that makes use of incentives and market process, and it has made progress toward controlling hospital costs and changing institutional behavior. But PPS does not control reimbursement for procedures performed outside hospitals. The combination of prospectively setting hospital reimbursement rates and reimbursing outpatient care on the basis of customary, prevailing, and reasonable fees has created what might be called the "squeezed balloon" effect. By squeezing spending on inpatient care, the system has created a bulge in spending at the opposite end—outpatient and home care. Though PPS has produced change, it can only have a limited impact on total medical expenditures because it only affects part of the system.

Budget regulation: An effective solution?

Since the use of both increased market competition and conventional government regulation have had only limited success in controlling medical care spending, what is to be done?

Spending for medical services can be controlled in three ways (Fuchs 1986). One approach is to improve efficiency in the provision and allocation of services. A second approach is to reduce the prices paid for the materials and services used in medical care, which implies paying producers and providers less. A third approach is to reduce the volume of services provided or to shift the balance from high-cost to low-cost services. Both regulatory tools and market mechanisms can be used to implement these three strategies. But given the halfway markets in medical care, without some kind of systemwide control the use of market mechanisms and/or regulation is unlikely to be more effective than it has been in the past.

Is there a point in the spending spiral where medical costs will become so large that payers of care—both public and private—will stand up to the political pressures of providers and patients and demand effective cost control? It almost happened in the early 1980s, and there were some real changes in the delivery system. But several years of reduced general inflation and high corporate earnings have

blunted the aggressive behavior of payers. There are indications that the rate of growth of medical spending is returning to pre-1982 levels. Insurance premiums are again rising by 10 to 20 percent (Medical Benefits 1987). The percentage of GNP going to medical care has risen from 10.5 percent in 1982 to 11.2 percent in 1987, and unofficial estimates for 1988 predict that it will approach 11.5 percent, or over $550 billion (ProPAC 1988).

There is no question that budget regulation can control spending. The experiences of Canada and Britain suggest that it can produce dramatic results (Evans 1987). The issue is whether we are willing to accept the negative consequences entailed—and "we" means everybody. Access to care would be limited somewhat for most Americans, although those who use the system the most (the elderly and the poor) will be most vulnerable. Such limitations could be across the board or focused on certain high-cost technologies, particularly those that are used during the last months of life. Quality of care might also suffer. In Canada, strict budgets did not produce measurable harmful reductions in services because they were able to focus these efforts on limiting the amount paid to providers. But our provider groups are politically much stronger, and therefore reduced spending is unlikely to be borne by them alone.

The strongest impetus for controlling spending in the Canadian system was the federal government's decision to limit its contribution to each province. This decision forced provinces to absorb the full impact of increases in spending beyond a tight predetermined level. With this political backbone in place, the provinces became much tougher in imposing restrictions on their physicians and hospitals. But in the U.S., the political situation will almost certainly differ. In spite of the studies suggesting that it is possible to substantially reduce medical spending with no negative impact on the quality of care (Eddy 1987), it is likely that even small reductions would be opposed due to perceived (as opposed to technically measured) quality deterioration. Even though independent assessments have not turned up many examples of serious reductions in the quality of care under PPS, consumers and providers have voiced serious concerns. These concerns have been enough to cause Congress to legislate important changes in the PPS system and to threaten even more far-reaching changes. Under a budget control system, Medicare and Medicaid beneficiaries would become "quality of care" watchdogs that would pressure legislators and the executive branch to provide what they (and their medical care providers) believe is a decent level of quality. This will require funding and could undermine budget control regulation in the most direct manner—by increasing the budget.

Both the major virtue and the major drawback of budget regulation is that it forces explicit choices about the allocation of resources and consideration of social priorities. This is a virtue because it brings to light choices that otherwise are not seen or are intentionally avoided; it is a drawback because facing such choices is a difficult and painful process. There may be no generally agreed-upon goals, or such goals may be sufficiently vague and ambiguous that translating

them into specific policies and funding decisions is inherently controversial. This is the stuff from which political conflict is kindled.

Over the past two decades the United States has undertaken numerous regulatory and market-oriented programs to limit spending, but these have been partial and fragmented. Often, just as the programs have verged on becoming effective, groups that would be adversely affected have exerted political pressure to protect their interests in ways that undermine the program. Economically and politically we want to have our cake and eat it, too. Thus we allow a political stalemate to support halfway competitive markets and to produce ineffective regulation in medical care.

However, increased spending is not inevitable, and we do not need to accept a totally governmental regulatory system to bring about a balanced rate of spending. We believe that it is possible to structure a system that permits many of the advantages of competition to remain but overlays competitive markets with a tougher, more effective regulatory system. One might have expected the current level of spending already to have forced such difficult social choices. But so far the nation has either avoided the tough trade-offs required or decided that the benefits of open-ended medical spending outweigh the social costs of its control. It is not clear that we really want to control spending. At the moment, spending 15 percent of the GNP for medical care by the year 2000 is clearly a possibility.

References

Altman, S., and J. Eichenholz. 1976. Inflation in the Health Industry: Causes and Cures. In *Health: A Victim or Cause of Inflation,* ed. M. Zubkoff. New York: Prodist.

Altman, S., and S. Weiner. 1978. Regulation as a Second Best. In *Competition in the Health Care Sector: Past, Present, and Future,* ed. Warren Greenberg. Germantown, MD: Aspen Systems.

Blendon, R., and D. Altman. 1987. Public Opinion and Health Care Costs. In *Health Care and its Costs,* ed. C. Schramm. New York: W. W. Norton.

Butler, L., H. Luft, and H. Lipton. 1987. *Medical Life on the Western Frontier: A Closer Look at the Competitive Impact of Prepaid Medical Plans in California.* Berkeley: Institute for Governmental Studies, University of California.

Crosier, D. 1983. Data Watch: National Medical Care Spending. *Health Affairs* 2: 1–30.

Enthoven, A. 1978. *Health Plan: The Only Practical Solution to the Soaring Cost of Medicare.* Reading, MA: Addison Wesley.

Etheridge, L. 1986. Ethics and the New Insurance Market. *Inquiry* 23: 305–15.

Eddy, D. 1987. The Quality of Medical Evidence and Medical Practice. Paper prepared for the National Leadership Commission on Health Care, Washington, DC, June.

Evans, R. 1987. Finding the Levers, Finding the Courage: Lessons from Cost Containment in North America. *Journal of Health Politics, Policy and Law* 11: 585–615.

Fein, R. 1986. *Medicare, Medicaid Costs: The Search for a Health Insurance Policy.* Cambridge, MA: Harvard University Press.

Feldman, R., B. Dowd, D. McCann, and A. Johnson. 1986. The Competitive Impact of Health Maintenance Organizations on Hospital Finances: An Exploratory Study. *Journal of Health Politics, Policy and Law* 10: 675–97.

Fuchs, V. 1986. Has Cost Containment Gone Too Far? *Milbank Memorial Fund Quarterly* 64: 479–88.

Gertman, P. 1987. Unpublished Estimates. Lexington, MA: Health Data Institute.

Gibson, R., and D. Waldo. 1984. National Health Expenditures, 1983. *Health Care Financing Review* 6: 1–30.

Ginsburg, P. 1987. Medicare's Prospective Payment System: The Expectations and the Realities. *Inquiry* 24 (2): 187–88.

Goldberg, V. 1976. Regulation and Administration Contracts. *Bell Journal of Economics* 7: 426–48.

Hewitt Associates. 1984. Comparing Practices in Health Care Cost Management. Lincolnshire, IL: Hewitt Associates.

Johnson, A., and D. Aquilina. 1986. The Competitive Impact of Health Maintenance Organizations and Competition on Hospitals in Minneapolis/St. Paul. *Journal of Health Politics, Policy and Law* 10: 659–97.

Luft, H. 1984. How Do HMOs Achieve Their Savings? Rhetoric and Evidence. *New England Journal of Medicine* 298 (6): 1136–43.

———. 1985. HMOs: Friends or Foes? *Business and Health* 3: 5–9.

Luft, H., S. Maerki, and J. Trauner. 1986. The Competitive Effects of Health Maintenance Organizations: Another Look at the Evidence from Hawaii, Rochester, and Minneapolis/St. Paul. *Journal of Health Politics, Policy and Law* 10: 625–58.

Manning, W., Arleen Leibowitz, George A. Goldberg, William H. Rogers, and Joseph Newhouse. 1984. A Controlled Trial of the Effects of Prepaid Group Practices on Use of Services. *New England Journal of Medicine* 310 (23): 1505–10.

Marmor, T., and J. Morone. 1980. Representing Consumers' Interests: Imbalanced Markets, Health Planning and HSAs. *Milbank Memorial Fund Quarterly* 58 (1): 125–65.

Medical Benefits. 1987. Health Insurance Rates Keep Climbing. (Reprinted from *Business Insurance*.) 15 September, p. 4.

Merrill, J., and C. McLaughlin. 1986. Competition versus Regulation: Some Empirical Evidence. *Journal of Health Politics, Policy and Law* 10: 613–23.

Meyer, J., ed. 1983. *Market Reform in Health Care*. Washington, DC: American Enterprise Institute.

Newhouse, J., Carl N. Morris, Larry L. Orr, et al. 1981. Some Interim Results from a Controlled Trial of Cost Sharing in Health Insurance. *New England Journal of Medicine* 305 (25) 1501–1507.

Prospective Payment Assessment Commission. 1988. Impact of the Prospective Payment System on the American Healthcare System. Unpublished draft. Washington, DC: ProPAC.

Schramm, C., Steven C. Renn, and Brian Biles. 1986. New Perspectives on State Rate Setting. *Health Affairs* 5: 22–33.

Schwartz, W. 1987. The Inevitable Failure of Current Cost-Containment Strategies: Why They Can Provide Only Temporary Relief. *Journal of the American Medical Association* 257 (2): 220–24.

Sullivan, S., and P. Ehrenhaft. 1984. *Managing Health Care Costs: Private Sector Initiatives*. Washington, DC: American Enterprise Institute.

Sykvetta, M., and K. Swartz. 1986. *The Uninsured and Uncompensated Care*. Washington, DC: National Health Policy Forum, George Washington University.

Vladeck, B. 1981. The Market vs. Regulation: The Case for Regulation. *Milbank Memorial Fund Quarterly* 59: 209–23.

Waldo, D., K. Lent, and H. Lazenby. 1986. National Health Expenditures, 1985. *Health Care Financing Review* 8: 1–21.

Wallack, S. 1981. Federal Health Professional Training Programs: The History and Impact. In *Federal Health Programs: Problems and Prospects,* ed. S. Altman and H. Sapolsky. Lexington, MA: Lexington Books.

Wilensky, G., and L. Rossiter. 1986. Patient Self-Selection in HMOs. *Health Affairs* 5: 66–80.

Competition in the Market for Nursing Home Care

Christine E. Bishop

Abstract. The competitive model may fit the nursing home sector better than it fits other health care markets, but Medicaid subsidies and regulation have not allowed the market to work freely, and nursing home insurance may cause further divergence from a competitive ideal. Incentives for both providers and consumers that capitalize on competitive aspects of the market might be used to improve outcomes of the nursing home market, especially under a system of comprehensive long-term care insurance.

The nursing home is the major paid provider of long-term care. As the population ages and longevity increases, long-term care is becoming an increasingly important sector of the nation's health economy: nursing home expenditures represented 8.3 percent of all health care expenditures in 1986, and recent estimates project that nursing home expenditures will grow from the current level of 0.8 percent of GNP to 1.2 percent of GNP by the year 2000 (Health Care Financing Administration 1987). This sector of the health economy has not always met public goals for cost containment, access to care, or quality of care. There is concern that too many elderly are being placed in institutions; that Medicaid patients have difficulty gaining access to care; that quality of care is uncertain or poor; and that the cost of such care is burdensome, both for individual families and for Medicaid programs. To some extent, these failings can be attributed to basic problems with the market for nursing home care, particularly barriers to the expression of consumer preferences about quality of care. However, because of the characteristics of this market, more reliance on market forces might lead to better outcomes.

The population of Americans most at risk for needing long-term care—those age 65 and over—is growing rapidly at the same time that innovations in financing and delivering long-term care are emerging.[1] This is therefore an op-

The author is grateful to colleagues at the Bigel Institute for Health Policy and to the editors for their comments on a previous draft of this review. Support for this research was provided by the Bigel Institute for Health Policy.

1. The discussion here is restricted to the nursing home's most important clientele, the elderly

portune time to examine the nursing home market as a mechanism for allocating scarce resources in long-term care and to consider policies that might strengthen the market's role. Over the next decades, fundamental changes in the financing and delivery of long-term care have the potential to change the roles of consumers and providers in the nursing home market and will ideally lead to better outcomes for long-term care use, quality, and cost.

This review considers how the economist's model of a competitive market might help us deal with the nursing home sector both now and in the years to come. The first section examines ways this market actually fits the competitive model better than some other health care markets do. It also notes that Medicaid's subsidy of demand and the ensuing regulation of supply have not allowed the market to work freely, and that insurance, which did not encourage efficient allocation of resources in the hospital sector, is on the horizon for the nursing home and may cause further divergence from the competitive market ideal. The second section reviews market outcomes with respect to cost, quality, and utilization for the nursing home sector and suggests policies that would enhance competition. The final section considers how incentives for both providers and consumers might be used to improve outcomes of the nursing home market under a system of comprehensive long-term care insurance using prepaid managed care organizations.

The market for nursing home care

The nursing home and long-term care. Long-term care differs from health care in general because of the nature of the needs it meets: the definition of "long-term care" encompasses personal and nursing care provided in a variety of settings to compensate for chronic functional disabilities rather than treatment or prevention of acute health problems. Because of illness or injury, individuals may become unable to carry out "activities of daily living" (as described by Katz et al. 1963). They then need personal assistance with these activities, which include walking, bathing, dressing, using the toilet, transferring into and out of bed, and eating. Disabled elderly individuals may also need personal assistance or supervision because of cognitive and emotional problems brought on by illness or injury.

The major source of long-term care service is not institutions or paid home care workers, but the families and friends of the disabled elderly. Over 70 percent of people with long-term care needs live in private residences, not institutions, and about three-quarters of the noninstitutionalized disabled population receive all needed assistance from family and friends (Liu, Manton, and Liu 1985). An-

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(generally those age 65 and over). The markets for care for disabled children, mentally retarded persons, and others with disabling needs will not be explicitly discussed.

other 20 percent receive assistance from these "informal" caregivers and from paid providers. It has been estimated that for every person in a nursing home, there are two with equal disability residing in the community.

Nursing home placement is thus not an inevitable consequence of aging or even of disability, but one of several alternative responses to individual needs. Nursing homes offer nursing and personal care to meet the health and disability needs of their patients and provide a supportive living environment that compensates for their patients' inability to carry out household activities.[2] At current use rates, an individual reaching age 65 has approximately a 2 in 5 chance of entering a nursing home at some point during his or her lifetime (Cohen, Tell, and Wallack 1986).

The value of competition. Theoretically, a freely operating competitive market for goods or services can reach a desirable allocation of resources within the larger economy. Consumers willing to pay for products can buy them at a price that reflects production cost, and inputs into production are combined efficiently so that production takes place at the lowest cost per unit output. When products differ in quality, style, or other attributes, consumers can express differences in tastes by selecting among these differentiated products, again at prices that reflect differences in production costs. Competition is not synonymous with cost containment: free expression of consumer preferences could lead to a greater allocation of resources to nursing home care as well as to efficient production of these services. Competition could lead to good quality of care (as judged by professionals) if consumers value quality and are willing to pay for it. But competition does not guarantee that patient needs will be met; consumers may not be able or willing to pay to meet their needs for care (as judged by professionals or other observers). But in theory at least, a competitive market for nursing home care would lead to the allocation of resources to the amount and type of nursing home care that consumers judge to be worth paying for.

The idealized competitive market requires informed consumers as well as numerous producers attempting to maximize the difference between revenue and cost. The nursing home sector exhibits some characteristics that might allow a freely operating market to reach desirable outcomes in production and consumption. Yet because of knowledge and choice barriers, government action, and financing problems, this market is not reaching desirable outcomes. We should still consider capitalizing on the strengths of the market; enhancement of competition could address current problems of overconsumption, excess unit costs, poor quality, and barriers to utilization.

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2. Nursing homes also supply postacute care, substituting for the last days of an acute hospital stay, but this is a relatively minor portion of the nursing home sector's output and may be considered as part of acute health care.

Competition among nursing homes. The nursing home industry is treated by economists as an industry engaging in competition with a differentiated product (Scanlon 1980; Palmer and Vogel 1983; Nyman 1985; Gertler 1987). Nursing home care is supplied in the United States by approximately 19,100 providers with an average of 85 beds (Strahan 1987). Almost 20 percent of these nursing homes are operated by nonprofit voluntary organizations and about 5 percent are run by the government, but 74.9 percent (14,400 facilities) are owned and operated by for-profit firms. Facilities are small relative to the total supply in many markets, so local monopoly is not an issue in most urban areas. However, concentration in local markets may be increasing as more facilities affiliate with nursing home chains. In 1985, 41.4 percent of all nursing homes were members of a group of facilities operating under one general authority or general ownership, up from 28 percent in 1977.

Start-up costs are not a significant barrier to entry. Plant and equipment costs per bed are far below hospital capital costs, and proprietary facilities have been able to enter the market with very low owner equity (Baldwin and Bishop 1984). Requirements for special professional expertise do not raise barriers to entry; although all states license nursing home administrators, educational requirements have not been notably high. In addition, there is no convincing evidence for economies of scale (Bishop 1980).

Consumer choice and nursing home care. The demand for nursing home care might appear to be free of some of the pitfalls that lead to market failure in other health care markets. First, a substantial proportion of patients pay for nursing home care themselves: 49.8 percent of residents relied on their own or family support on admission in 1985 (Hing 1987). In effect, they (often with input from their families) have chosen the nursing home as a care environment over their previous community situation and are paying for that care out-of-pocket at a market-determined price. Thus they and their families make personal decisions about the value of care in relation to the alternatives on which the funds could be expended. In addition, because of the nature of their needs and the alternative forms of care available, prospective nursing home patients are sometimes able to wait for placement. Indeed, 75.1 percent of nursing homes in the 1977 National Nursing Home Survey maintained waiting lists (Van Nostrand et al. 1979). Under current supply conditions, the willingness or ability to wait as well as the willingness to pay is expressed in consumers choosing among facilities. These facts should foster consumer choice about the type and amount of care desired. Consequently, competition among providers to meet patient demands might be expected to lead to efficient resource use.

In contrast, private insurance and Medicare have had little impact on the nursing home market. Although private long-term care insurance is being sold to healthy elderly persons, as yet it pays for a negligible proportion of nursing home stays that provide supportive nursing and personal care services to meet disability

needs. Medicare was neither designed nor intended to cover long-term care for disability needs; rather, Medicare covers only the postacute care that substitutes for the last days of a hospital stay, and coverage is so restricted that it pays for fewer than 2 percent of the nursing home days provided annually. Medicaid, the state-run program that reduces the price paid by poor or impoverished nursing home consumers, does have a significant impact on the market, and will be discussed below.

Second, although nursing home care is certainly critical to the survival of many patients, patients are less likely to seek nursing home care than acute medical care in emergency circumstances. The nursing home may be seen as one of several alternative living arrangements for the disabled elderly, who may also live with relatives supplying supportive care or who may seek paid home care services. The existence of alternatives would be expected to make demand for nursing home care more elastic than hospital demand and provide more scope for consumer choice.

Third, consumers have the ability to choose among many attributes of the nursing home service. The care required is generally not technically sophisticated, does not need to be prescribed by physicians, and entails a supportive living environment that can be judged as pleasant or undesirable by the patient. By definition, the nursing home provides a living environment (meals, laundry, activities) to individuals unable to perform the complex functions of organizing and running a household. More technical nursing services (injections, dressings, monitoring of vital signs) are also supplied, but the critical service sought by most nursing home patients is assistance with basic living activities which they can no longer perform for themselves.

In fact, prospective patients do have differing preferences across nursing homes. Location is an important consideration because of the importance of continuing contact with family and friends in the home community. Affiliation with a particular church or other group may make some homes preferable to certain patients. Amenities and intensity of care (hours of care per patient) are certainly associated with ongoing quality of life and patient comfort. Health professionals may question the ability of consumers to judge quality of care in the nursing home, but if "quality" is defined as the ability of the nursing home to improve patient outcome (Kane et al. 1983), then professionals too are only beginning to understand its technical attributes.

It would seem, then, that many nursing home patients and their families should have more ability and more incentive than hospital patients to act as informed consumers. However, failures of information remain. Patients often seek care at a time of health crisis: in 1985, 44 percent of admissions that were not transfers from other nursing homes occurred after an acute hospital stay (Hing 1987). Elderly persons who live alone may have few viable alternatives to the nursing home at such a time, and families who have been successfully meeting the patient's needs may feel unable to continue after an acute health incident. Although the

supply of home-delivered nursing and personal care services is growing, it is often difficult for families or discharge planners to mobilize the multiple services needed by a particular patient, and a nursing home admission may be chosen as the simplest alternative. The physical and cognitive impairments that suggest consideration of nursing home placement also make it difficult for individuals to consider alternatives or to choose among nursing homes. Once nursing home consumers are placed in an institution, multiple factors make it extremely unlikely that they will "vote with their feet" by switching to another nursing home: the institutionalization itself may increase dependency; patients and families are unlikely to continue any comparison shopping; and concern about the trauma resulting from changing the living environments of debilitated patients may impede the consideration of shifting to another nursing home.

It is still possible that the number of potential patients who pay for care themselves and are able to exercise consumer choice could form a large enough margin to lead to desirable market outcomes (price equals marginal cost; price increments for additional quality equal incremental cost), or that this result could be achieved through dissemination of information about nursing home characteristics and quality.

Medicaid and the nursing home market. The structure of the industry supports the idea that nursing homes could respond to informed consumers with the amount and quality of care that consumers are willing to pay for, and the preponderance of for-profit firms should foster efficient production and pricing. However, with current Medicaid subsidies and the attendant regulations, there is little scope for consumer choice among nursing homes. Nursing home bed supply has been closely restricted, so patients in need of care, especially Medicaid patients, often feel compelled to accept the first bed that becomes available.

Medicaid, which was conceived as a program to assist poor people in need of health care, has evolved so that a high proportion of state Medicaid budgets are spent for the long-term care of elderly persons who were not poor during most of their lives. The effects of Medicaid on both the demand and the supply sides of the market have been far-reaching. The Medicaid subsidy itself reduces the incentives of potential patients to weigh the costs and benefits of entering a nursing home and, because of regulated prices, constricts the bed supply available to Medicaid patients so sharply that they have little choice among facilities. Pricing for the Medicaid portion of the market does not reflect differences in quality of care or in the type of patient being served. And bed supply has been directly restricted by certificate of need, further hampering the market's ability to respond to demand. Capacity, consumer choice, price, and quality of services have been regulated in response to immediate needs for expenditure control and minimum acceptable quality. Occasionally regulation has been initiated to enhance the access of hospital patients. However, regulation has never been designed to cap-

italize on the potential ability of the nursing home market to achieve desirable outcomes.

State Medicaid programs cover nursing home care in skilled nursing facilities and intermediate care facilities for persons considered "categorically needy" by each state, most importantly the poor elderly who are eligible to receive Supplemental Security Income (SSI). Many Medicaid programs also pay for patients who become poor, or "spend down," in the process of purchasing nursing home care (Doty 1986). Medicaid patients must pay all of their income but a small spending allowance for nursing home care. For public patients, the price for care is set equal to available income less the individual allowance; it is not zero, but it is below full price. The meaning of the private price facing a prospective private-pay patient is also changed by the spend-down rules. If spend-down appears likely, private price becomes the rate at which assets will be spent down, and a higher price merely shortens the time to Medicaid eligibility.

In many parts of the country, care for disability-related needs is effectively funded only if a disabled elderly person enters a nursing home. Home care and living costs must be paid out-of-pocket if he or she remains in the community, but are covered by Medicaid upon nursing home entry. Despite the reluctance of the elderly to enter nursing homes and the draconian spend-down required by Medicaid rules, many observers see this as causing a bias toward institutional care.

The Medicaid subsidy is supposed to work toward equalizing the access of poor and affluent elderly to nursing home care. But the accompanying policies and regulations have had both direct and unintended effects that have altered access, cost, and quality for all patients and that certainly have not presented consumers and producers with incentives to reach better market outcomes. As the nursing home market evolved, fueled by Medicaid demand, policymakers became concerned that utilization was too high, that public expenditures were excessive, and that quality was inadequate. State Medicaid programs have pursued a number of strategies to limit their exposure to apparently uncontrollable nursing home Medicaid expenditures. States set the prices they pay for nursing home services, so that nursing homes face a regulated price for care supplied to Medicaid patients. Concerned by the drain on their budgets, states next developed regulations to limit nursing home supply through certificate of need, reasoning that if there were fewer nursing home beds, there would be fewer Medicaid patients to pay for. Attempts have been made to limit nursing home admissions through preadmission screening of both Medicaid and potential spend-down patients. Quality regulation became more important politically when so many government dollars were paying for care.

Price. Public price-setting methods have not mimicked competitive market price mechanisms. Many state welfare programs initially paid nursing homes fixed, flat rates that were unrelated to costs or charges. Retrospective reimbursement at an average computed cost per day then became the rule, often with ceil-

ings for certain types of costs. Under such methods, accounting depreciation and interest expenses were reimbursed for days provided to Medicaid patients at the same time that owners were able to deduct these expenses for tax purposes. Some owners increased their reimbursement by buying and selling nursing homes at inflated prices (Mendelson 1974; Vladeck 1980); profits on sales were tax-advantaged as capital gains. Nursing homes proliferated and expanded in response to these apparently low-risk opportunities for profit on nursing home capital investments (Baldwin and Bishop 1984).

Supply and utilization. State Medicaid programs responded to the specter of unlimited Medicaid nursing home expense by regulating the total number of nursing home beds under certificate of need. Possibly even more important were restrictions placed on the capital-side profits available to nursing home owners (ceilings on depreciation expense, recapture of depreciation, limits on ownership change) and other cost-containment measures that make it much less lucrative to build beds to serve Medicaid patients (Feder and Scanlon 1980). Expansion of the nursing home bed supply now is most likely to occur where beds will serve private-pay patients.

Preadmission screening for Medicaid patients has been implemented in some states to increase the probability that nursing home entrants paid for by the state program are those who most need institutional care; it is also applied in some areas to private-pay patients, because they may soon spend down and require Medicaid funding.

Quality. Quality regulation has focused on inputs to care (for example, licensed nursing hours per bed), fire safety, and administrative procedures rather than on patient outcome. Patients exercising choice in the marketplace would be expected to be concerned about comfort, amenities, and dignity of the care received, but these are not well reflected in state input standards.

Nursing home insurance. The demand for private nursing home insurance is a response to the personally catastrophic nature of nursing home expenses. About a quarter of nursing home admissions stay more than a year, at a cost averaging $61 per day for skilled care and $48 for intermediate care in 1985 (Strahan 1987). Indeed, because of the great expense involved, a significant proportion of private-pay patients spend all their income and assets on care.[3] Private nursing home insurance policies generally pay an indemnity amount per day of nursing home care during the early months of a nursing home stay, thereby reducing the insured's cost at admission (Meiners 1984; National Association of Insurance Commissioners 1986). Individuals who are thus insured would be more likely to enter

3. Long-term care insurance may be seen as asset and choice protection rather than as assurance that long-term care needs will be met (Bishop 1981). Lack of financial resources should not prevent a person in need from receiving care because Medicaid programs cover nursing home care, albeit in lower-cost Medicaid nursing homes and only after the patient has expended virtually all assets.

nursing homes readily than if they were liable for the full price of care. Therefore, if private insurance becomes more widely available, it could lead to increased private demand for care at every potential price. Because nursing homes provide a living arrangement (room and board) and a substitute for family care and for home health care, this "moral hazard"—a change in behavior due to insurance (Pauly 1968)—may be more important for the nursing home industry than it has been for the hospital industry.

Nursing home market outcomes

Price, quantity, and quality of nursing home care. Because Medicaid funds about half of nursing home care, and because of the supply restrictions, public pricing, and quality regulation that accompany this public program, there can be little confidence that nursing home market outcomes will achieve a competitive market ideal. If it continues to develop along current lines, private insurance for nursing home care will merely fuel private demand without improving the efficiency of nursing home resource allocation.

The major role of Medicaid fundamentally affects the rules of the game for nursing homes. The demand for nursing home care comes from two segments—private and public patients; indemnity insurance would add to private demand. The theory of the firm as applied to nursing homes by Scanlon (1980) and others (Palmer and Vogel 1983; Gertler 1987; Nyman 1985) shows the firm facing a downward-sloping rather than a perfectly elastic demand from private patients, indicating monopolistic competition. The demand from Medicaid patients is assumed to be so great that the firm can supply as many Medicaid days as it wishes at the public price (see Palmer and Vogel 1983 for other possibilities). Profit-maximizing firms are assumed to choose the rate of output at which marginal revenue equals marginal cost. With a fixed rate for public patients, the profit-maximizing nursing home should therefore supply public and private care so that marginal revenue from private patients equals the public rate (marginal revenue from public patients) and should attempt to reach optimal firm size where marginal cost equals the public rate. The outcomes of this two-part, highly regulated market are likely to differ from an idealized competitive market in price, cost, quantity, and quality. On the positive side, it is important to remember that the Medicaid subsidy allows needy elderly to receive care, which is a desired divergence from a freely operating market in which only those able to pay for care at market prices may participate.

Unit cost and price. Because the number of nursing home beds has been controlled so tightly, it cannot be assumed that firms have achieved the economically optimal rate of output, either in terms of efficient firm size (where marginal revenue equals marginal cost) or in terms of equating marginal cost and consumers' marginal utility. Where nursing homes face public rates that are closely tied to average costs (whether prospective or retrospective), nursing home

operators have little incentive to produce care efficiently. Medicaid methods for determining payment for the services of nursing home capital have not fostered efficient financing, and, with tax incentives, may lead to excess investment per bed (Baldwin and Bishop 1984). Inefficient production may not be a major problem, but it does increase the amount of Medicaid funds and private payments flowing into the nursing home sector.

Medicaid also causes the private price to be higher than it would be in the absence of Medicaid demand and overall supply restrictions. Private prices may also be increased by the spend-down phenomenon. For patients who are highly likely to spend down, price reflects the rate at which income and assets are depleted; thus the number of patients for whom price differences are not relevant to the choice among nursing homes is increased.

The buffer provided by the Medicaid segment of the market means that small outward shifts in demand would not increase the price of nursing home care for those who are privately insured. For a facility reimbursed with indemnity payment insurance, marginal revenue would equal its fixed Medicaid rate at a higher number of private patients but at the same price to the facility as before. On the other hand, prices *will* increase if industry capacity must expand (with increasing marginal cost) to meet private demand. Price increases would also occur (although for a different product) if some of the expanded private demand were expressed as demand for quality. And as private insurance further reduces the access of Medicaid patients to care, state policymakers may increase reimbursement levels and lift supply constraints, thus also increasing private prices and total nursing home expenditures.

Quantity. Concerns about quantity outcomes achieved by the current nursing home market are reflected in the longstanding policy debate about the overuse of institutional care for the elderly and the provision of "unneeded" nursing home care to elderly persons with low levels of disability. Nursing homes served 4.6 percent of the population age 65 and over in 1985. Markets for nursing home care reach widely divergent quantity outcomes, as indicated by beds per capita elderly by state: the industry supplied over 80 nursing home beds per 1,000 people age 65 and over in Nebraska, Wisconsin, South Dakota, and Maine, but fewer than 35 per 1,000 elderly in Arizona, Florida, New Mexico, and West Virginia (Roper 1986).

If both private and Medicaid care is supplied in a nursing home market and fixed Medicaid prices are lower than those for private patients, then the market for private care must be in equilibrium, even if there is a restricted bed supply. Indeed, Scanlon (1980) demonstrated that private demand is generally satisfied. Given the fact that private prices are almost certainly higher than they would be without Medicaid, it is possible that insofar as private demand is responsive to per diem price, *fewer* private patients are seeking care than would seek it in a freely operating competitive market; the potential of patients to spend down further complicates this possibility.

Because Medicaid patients do not pay even the Medicaid price for care out-of-pocket, and because the Medicaid rates paid to facilities are probably less than their long-run marginal cost, the existence of persistent excess unsatisfied Medicaid demand is not surprising (Scanlon 1980). In most areas, more Medicaid patients seek care than there are beds available to them, and this has been exacerbated by direct supply restriction. Nursing homes operate at virtually full capacity (92 percent occupancy in 1984) (Strahan 1987). Growth in private demand—a result of the aging of the population and increases in the income and assets of the elderly—presumably is currently being met by shifting beds away from Medicaid patients, thus making excess Medicaid demand even more problematical. This situation will be even more pronounced when private nursing home insurance becomes more prevalent. If nursing home supply is not allowed to expand, beds will be shifted from public to privately insured admissions, leaving still more unmet Medicaid demand. There is likely to be some decrease in Medicaid demand as a result of coverage by private nursing home insurance of patients who otherwise would have sought Medicaid payment as spend-down beneficiaries, but this will not fully compensate for the displacement of Medicaid patients by insured private patients.

The problem of nursing home access for Medicaid patients is especially difficult for those with a greater than average need for care. The public rate may even exceed marginal cost for both high- and low-need patients, but profit is greater with the low-need patient. Nursing homes understandably prefer to admit patients with lower care resource needs over those with high needs if the public price is identical. This has caused a backlog of patients in hospitals (Gruenberg and Willemain 1982), forcing Medicare and Medicaid to pay for "administratively necessary days" for patients awaiting placement in nursing homes. Under Medicare's prospective payment system, hospitals are no longer paid for these excessive lengths of stay, so they are hidden; but this phenomenon continues to result in a misallocation of health care resources. Public price provides no mechanism for equilibrating demand and supply in this market.

Despite the difficulties often experienced by discharge planners, families, and patients seeking nursing home placement, many health planners still argue that nursing home care is being oversupplied (Swan and Harrington 1986). The increasing cost of Medicaid reimbursements for nursing home care fuels this concern: in 1982 nursing home care accounted for 32 percent of state Medicaid expenditures. Patient assessments of other nursing home residents indicate that a significant number of relatively low-need patients could be served at home, despite the fact that they or their families have sought nursing home care. This observation might be used to support equivalent subsidization of home-delivered care and other community-based services that are possible alternatives for nursing home care. But it is more likely to result in continued restriction of nursing home investment to the amount of care "needed," which is usually measured against an ideal of beds per 1,000 elderly in the planning area. Ironically, because of

the nursing home's incentives, the scarce beds are allocated to private-pay patients and relatively low-need Medicaid patients. Preadmission screening restrictions that attempt to improve the allocation of nursing home beds to patients most in need neither enhance consumer choice nor necessarily lead to appropriate allocation of long-term care resources.

Quality. Regulation directed at nursing home quality has not solved quality problems, and quality of care remains a concern of policymakers. In a report to Congress, the Institute of Medicine's Committee on Nursing Home Quality concluded that although care was appropriate in many nursing homes, "in many other government-certified nursing homes, individuals who are admitted receive very inadequate—sometime shockingly deficient—care that is likely to hasten the deterioration of their physical, mental, and emotional health"(Institute of Medicine 1986). The committee held inadequate government regulation responsible for this situation. In contrast, nursing home industry leaders insist that Medicaid reimbursement is inadequate to support high-quality care.

One analyst has argued that the failure of competition in the Medicaid market—a result of excess Medicaid demand—has led to unacceptable quality of care, and that higher Medicaid rates would lower incentives for quality (Nyman 1985). Where there is excess Medicaid demand, Medicaid patients must accept placement in whatever nursing home will admit them, and cannot choose among those with different characteristics. In these circumstances, providing higher-quality care does not increase the nursing home's revenue except as it attracts private-pay patients. Higher Medicaid per diem rates make it more likely that nursing homes will admit more Medicaid patients and reduce service to private-pay patients, thus decreasing the incentive to provide high-quality care. (This argument rests on the premise that consumers, at least at the margin, can choose among nursing homes on the basis of quality.)

One way to interpret the current market outcomes in the nursing home sector is to say that, despite protest to the contrary, state Medicaid programs are acting effectively to buy the services they wish to purchase for Medicaid patients—a limited amount of relatively low-cost care of uncertain quality. Feder and Scanlon (1980) argue that Medicaid programs are unwilling to enforce or pay for higher-quality care or to fund in full the need of Medicaid patients for nursing home admissions. In this view, low Medicaid reimbursement rates send the correct market signal to the nursing home industry. Private-pay patients are able to purchase care to the extent they are willing to pay for access and quality. The implication is that as private insurance expands, the market will split further into two segments, with care supplied by different providers. This result would allow private patients to purchase amenities for which they are willing to pay, but it might not address the need for equal access to high-quality health care.

Can market forces improve outcomes? In theory, a regulated market can work toward public policy goals through competitive forces. It is possible that

changes in the nature of regulatory constraints would enable the nursing home market to meet such goals more effectively. Because of the special characteristics of the nursing home market, it is appealing to consider whether consumer choice and profit-maximizing firm behavior might be harnessed to further the achievement of public goals for long-term care. The amount and appropriateness of nursing home care supplied to the long-term care population, the quality of care, and the efficiency and cost of care could clearly stand to be improved. Current concerns about the cost and quantity of institutional care now consumed by older Americans will only increase as nursing home insurance grows, although the financial burdens now borne by individual private-pay patients and their families will be shared with other insureds. The replacement of specific regulations with incentives for better allocation of resources might allow improvement to occur through market action.

Relax supply restrictions. Ending certificate of need and thus allowing nursing home expansion and entry will not do much to improve access to care for Medicaid patients where the market for private care is in equilibrium and Medicaid rates are too low to make new building worthwhile. Beds will be built only where and when they are profitable; such profitability will occur with the growth of private-pay demand due to increased elderly population, rising incomes, and greater availability of insurance coverage. If certificate of need is not relaxed, privately insured patients will eventually have as much trouble finding a nursing home bed as Medicaid patients do today, making insurance less valuable than initially expected by its purchasers. Increasing Medicaid rates—and thus making Medicaid patients more attractive to nursing homes—would foster investment in nursing home beds for Medicaid patients, but such investment would only occur if supply constraints were relaxed. If Medicaid patients could choose among nursing homes, competition among nursing homes should improve quality as well as access.

Adjust reimbursement policy to harness market forces. Changes in nursing home reimbursement policy under Medicaid could move the nursing home sector closer to realizing a competitive market outcome. Cost-related reimbursement methods often set different rates for providers supplying similar types of care to similar patients; prospective systems may pay flat, fixed rates to providers supplying different types of care to different patients, even though some types of care are more costly than others and some types are more valued by Medicaid. Incentives for valued aspects of care (including access to care and more intensive care for high-need patients), efficiency, and quality of care can be built into Medicaid rate systems.

New developments in rate-setting do appear to be building market incentives into public pricing. First, state Medicaid programs are moving toward prospective reimbursement, setting prices in advance (Holahan 1987; Cohen and Holahan 1987; Harrington and Swan 1984). Paying a predetermined price rather than retrospectively reimbursing costs encourages efficient resource use because nursing

homes can keep any savings as profits. However, many prospective reimbursement systems still underwrite facility cost differences, paying more to providers that have historically had higher costs and less to those that have had lower costs without determining whether the former are producing a more valuable product than the latter. The problem of specifying the desired product to be purchased by Medicaid programs for their patients becomes all the more important under prospective reimbursement (Bishop, Plough, and Willemain 1980). Efficiency incentives may result instead in providing low-cost care for patients who need only low-intensity nursing home services or in providing poor-quality care. If public pricing methods are to work for better outcomes, rates should express the willingness of Medicaid programs to pay for various aspects of the nursing home product.

States have introduced case-mix adjustment of reimbursement rates in order to pay more for care for high-need patients and less for low-need patients (Stassen and Bishop 1983; Adams and Schlenker 1986). These rate systems are designed to overcome the reluctance of nursing homes to admit high-need patients when they would be paid the same rate for low-need patients. Rewards to facilities that admit difficult patients would reduce hospital backup and ultimately reduce hospital expenditures for Medicare and Medicaid (Meiners 1985).

It is more difficult to use reimbursement directly to foster high-quality care (Willemain 1983). Industry representatives argue that inadequate reimbursement is responsible for low quality, but higher reimbursement may result only in higher profit if there are no direct incentives to supply high-quality care as well. In addition, researchers have not found a consistent positive relationship between cost and quality, as measured by the conformance of facilities to state licensing standards (Nyman 1985; Ullman 1987; Gertler 1987). Reimbursement systems have attempted to enhance quality by placing cost-containment incentives only on nonnursing costs and by directly rewarding providers that achieve quality standards. This is an area in which public pricing has difficulty mimicking the ideal private price system and where consumer choices set prices on valued aspects of a service.

Assure appropriate quality by enhancing consumer choice. The lack of information typically available to prospective nursing home patients, the urgent and one-time nature of their decisions, and their difficulty in moving after placement are inherent aspects of the process of choosing a nursing home that hinder consumers from demanding good quality of care. For many policymakers, these characteristics rule out increased competition as a solution to quality problems (Institute of Medicine 1986). However, increasing the amount of information available to consumers and families might allow the current private market to produce better outcomes with respect to quality, and strategies that allow Medicaid patients to benefit from the private-pay patient's market role could improve quality for public patients. Such approaches will become more attractive if nursing home insurance increases the purchasing power of private-pay patients.

For example, publicly subsidized case managers could provide information and assistance to individuals and families making decisions about nursing home entry. Nursing homes that serve only Medicaid patients appear to be more subject to quality problems, and Medicaid payment might be available only to facilities that can attract a certain proportion of private-pay patients as well. Nyman (1985) has proposed a Medicaid reimbursement system that makes public price proportional to private price, with the percentage rising as the nursing home's proportion of private patients increases.

A broader view: Efficient resource allocation in long-term care

Market-oriented strategies may improve the effectiveness of the nursing home market, but problems will remain. Better information on quality of care, relaxation of supply constraints, public price setting that better reflects product differences, and further increases in the role of private-pay consumers could move the nursing home sector toward better quantity, cost, and quality outcomes. But in a larger sense, improving outcomes for the nursing home market alone will not address overall resource allocation concerns—i.e., that older Americans overuse institutional care, that the financial burden of nursing home care will bankrupt large numbers of individuals and families and will take an increasing share of gross national product as our population ages, that quality of life for the poor institutionalized disabled is unacceptable, and that the needs of many disabled elderly persons residing in the community and their caring families are not adequately met.

Fresh approaches to financing and delivery of long-term care could lead to market outcomes that come closer to satisfying consumer wants and public policy goals. Flexible financing arrangements could allow consumers more choice about lifetime spending and quality of life in their later years; for the disabled, long-term care is a question of quality of life and living arrangement as well as of health need and quality of care. Innovations in long-term care delivery could embed the nursing home within a system of comprehensive long-term care. Organizations supplying comprehensive care could vie for consumers before they need care, competing on the basis of quality, price, and criteria for allocating care.

How would such organizations work, and what role would the nursing home play? Members would join comprehensive care organizations at a fee based on their age and disability. Premiums would be paid from current income and assets or would be prefunded through a lifetime insurance fund accumulated over working years. Poor elderly could be enrolled by Medicaid. The organizations would provide or contract for home-delivered care, congregate housing, and nursing home care. Provision of services to individuals would be based on predetermined criteria for need, with gatekeepers making patient assessments; coinsurance payments reflecting the relative costs of various options could give consumers in-

centives to control their own utilization of scarce long-term care resources. The organizations would have incentives to provide the appropriate mix of home-delivered and institutional services, and each would have to provide appropriate access to care for members, according to its criteria, if it were to keep members and attract new ones. The organizations would have incentives to provide or purchase care efficiently. They would also have incentives to provide high-quality care because individuals would make decisions about joining when they were not in immediate need of care, and would thus have more ability to monitor quality.

Such plans can incorporate features to limit moral hazard and to avoid overconsumption, to enhance consumer choice over quality, and to foster efficient production of service. If features of the market for long-term care on both the demand and the supply sides are borne in mind, they should allow better allocation of resources, including nursing home care.

Quantity. Nursing home care is currently overused by some patients because of subsidies and barriers to use of substitutes, while it is underused by others because of inadequate access or financial barriers at the time of need. A comprehensive long-term care organization, joined before care was needed, could market itself based on access to care and price of care at the time of purchase. Nursing home use would be rationed by coinsurance payments and by patient assessment.

Coinsurance payments for services could be used to reduce the premium cost and to give consumers appropriate incentives at the point when care is needed. Home-delivered alternatives to nursing home care should be insured at a rate equal to nursing home care; consumers and their families would then take an active role in assessing the costs and benefits of various options. This means that copayments for nursing home care should be set higher copayments than for home care to reflect the savings to nursing home entrants on rent and food costs. Distortion of choice would thus be avoided (Commission on College Retirement 1986). Efficient allocation of the major source of long-term care services—family care—is difficult to achieve under insurance, but coinsurance and deductibles for paid sources of care should encourage families to remain involved in supplying care, as most wish to do.

Instead of or in addition to price mechanisms, insurers may use gatekeepers to assure that beneficiaries seeking insured care meet criteria for receiving it, and thus limit overuse or moral hazard. Although criteria for determining the need for long-term care services are less clear than they are for acute medical care services, progress has been made on patient assessment (Brody 1987). One insurance proposal (Commission on College Retirement 1986) has stressed the independence of patient assessment from providers of care, who may benefit from overuse or lose objectivity about patients' needs.

Cost. More widespread insurance for long-term care opens possibilities for the exercise of market power of bulk purchasers of care and for increasing the role of price in consumer choice, since care plans would be selected before care

is desperately needed. Insurance plans could designate preferred providers of nursing home and home care, allowing them to obtain better prices and quality standards for their beneficiaries. Competitive bidding for contracts that guarantee access for plan members might also control costs. Organizations providing long-term care to large insured groups would have the option of operating their own nursing homes and home health agencies, so that market prices would be contained.

Quality. Incorporating the nursing home as a resource available to members of a specific group of largely well elderly would improve community interaction with nursing home residents and work to sustain quality standards.

Ideally, consumers would choose among organizations based on price, quality, and their assessment and utilization criteria. Assuming active consumer choice among managed care organizations based at least in part on price, an organization providing long-term care on a prepaid basis would have strong incentives for the cost-effective allocation of care resources.

The continuing care retirement community. An example of a prepaid long-term care organization is the continuing care retirement community (CCRC). CCRCs offer supportive community-based services and nursing home care to their contract members when they need it in exchange for an entry fee and monthly fees that are payable for life (Winkelvoss and Powell 1984). CCRCs have different implicit rules about long-term care resource use which result in consistent patterns of nursing home use (Bishop 1987)—even though care is fully insured in full-guarantee communities, its use is controlled by community management. Consumers choose among CCRCs on the basis of many factors, but one of them must be the access to nursing and supportive care. CCRCs own and operate the nursing homes that become available to members when they need care. Potential entrants, who must be well when they join the community, are able to carefully weigh the desirability of the nursing home as they make their entry decisions.

An experimental plan called "life care at home" (Tell, Cohen, and Wallack 1987) would translate the CCRC concept into the community at large. "Life care at home" programs would enroll well elderly living at home for lifetime coverage for nursing home and other long-term care. As in the CCRC case, there would be consumer regulation of the quality of nursing care in that well elderly would join an organization that entailed a specific source of nursing home care.

If such organizations became widespread, the nursing home would be more likely to provide desired care efficiently and effectively. Allocation of resources between institutional and other forms of care would improve as managed care organizations employed consumer incentives (deductibles and coinsurance) and gatekeeping approaches. Managed care organizations have the potential to act as more effective group purchasers of nursing home care, with better cost containment and quality control than individual private buyers can exercise today. In addition, members of managed care organizations, especially those joining relatively small groups such as continuing care retirement communities or local man-

aged care organizations, are likely to express more effectively their cost and quality preferences before care is needed rather than at the point of nursing home entry.

References

Adams, E. Kathleen, and Robert E. Schlenker. 1986. Case-Mix Reimbursement for Nursing Home Services: Simulation Approach. *Health Care Financing Review* 8 (1): 35–45.

Baldwin, Carliss Y., and Christine E. Bishop. 1984. Return to Nursing Home Investment: Issues for Public Policy. *Health Care Financing Review* 5 (4): 43–52.

Bishop, Christine E. 1980. Nursing Home Cost Studies and Reimbursement Issues. *Health Care Financing Review* 1 (4): 47–64.

———. 1981. A Compulsory National Long-Term Care Insurance Program. In *Reforming the Long-Term-Care System: Financial and Organizational Options*, ed. James J. Callahan and Stanley S. Wallack. Lexington, MA: D. C. Heath and Co.

———. 1986. Living with Others as an Alternative to Nursing Home Use: Theoretical and Empirical Analysis. Presentation to the Gerontology Society of America, Chicago.

———. Forthcoming. Use of Nursing Care in Continuing Care Retirement Communities. *Advances in Health Economics and Health Services Research*.

Bishop, Christine E., Alonzo L. Plough, and Thomas R. Willemain. 1980. Nursing Home Levels of Care: Problems and Alternatives. *Health Care Financing Review* 2 (2): 33–45.

Brody, S. J. 1987. Strategic Planning: The Catastrophic Approach. *Gerontologist* 27 (2): 131–38.

Cohen, Joel, and John Holahan. 1986. An Evaluation of Current Approaches to Nursing Home Capital Reimbursement. *Inquiry* 23 (1): 23–39.

Cohen, Marc A., Eileen J. Tell, and Stanley S. Wallack. 1986. The Lifetime Risk and Costs of Nursing Home Use Among the Elderly. *Medical Care* 24 (12): 1161–72.

Commission on College Retirement. 1986. *A Plan to Create Comprehensive Group Long-Term Care Insurance for College and University Personnel*. New York: Commission on College Retirement.

Davis, Karen, and Diane Rowland. 1986. *Medicare Policy: New Directions for Health and Long-Term Care*. Baltimore: Johns Hopkins University Press.

Doty, Pamela. 1986. The Politics of Long-Term Care Insurance: Is Medicaid a Deterrent to Private Coverage? Unpublished paper. Washington, DC: Office of Legislation and Policy, Health Care Financing Administration.

Feder, Judith, and William Scanlon. 1980. Regulating the Bed Supply in Nursing Homes. *Milbank Memorial Fund Quarterly* 58 (1): 54–88.

Gertler, Paul J. 1987. *Subsidies, Quality and Regulation in the Nursing Home Industry*. Cambridge, MA: Harvard School of Public Health.

Gruenberg, Leonard, and Karl A. Pillemer. 1981. Disability Allowance for Long-Term Care. In *Reforming the Long-Term-Care System: Financial and Organizational Options*, ed. James J. Callahan and Stanley S. Wallack. Lexington, MA: D. C. Heath and Co.

Gruenberg, Leonard W., and Thomas R. Willemain. 1982. Hospital Discharge Queues in Massachusetts. *Medical Care* 20 (2): 188–200.

Harrington, Charlene, and James H. Swan. 1984. Medicaid Nursing Home Reimbursement Policies, Rates, and Expenditures. *Health Care Financing Review* 6 (1): 39–49.

Health Care Financing Administration. 1987. National Health Expenditures, 1986–2000. *Health Care Financing Review* 8 (4): 1–36.

Hing, Esther. 1987. Use of Nursing Homes by the Elderly: Preliminary Data from the 1985 National Nursing Home Survey. National Center for Health Statistics, *Advance Data* Number 135. Washington, DC: U.S. Government Printing Office.

Holahan, John. 1985. State Rate-Setting and Its Effects on the Cost of Nursing Home Care. *Journal of Health Politics, Policy and Law* 9 (4): 647–67.

Institute of Medicine, Committee on Nursing Home Regulation. 1986. *Improving the Quality of Care in Nursing Homes*. Washington, DC: National Academy Press.

Kane, Robert L., Robert Bell, Sandra Riegler, Alisa Wilson, and Emmett Keeler. 1983. Predicting the Outcome of Nursing Home Patients. *The Gerontologist* 23 (2): 200–206.

Kane, Rosalie A., and Robert L. Kane. 1985. The Feasibility of Universal Long-Term-Care Benefits: Ideas from Canada. *New England Journal of Medicine* 312 (21): 1357–64.

Katz, S., A. B. Ford, R. W. Moskowitz, B. A. Jackson, and M. W. Jaffee. 1963. The Index of ADL: A Standardized Measure of Biological and Psycho-Social Function. *Journal of the American Medical Association* 185: 914–19.

Liu, Korbin, Kenneth G. Manton, and Barbara Marzetta Liu. 1985. Home Care Expenses for the Disabled Elderly. *Health Care Financing Review* 7 (2): 51–58.

Meiners, Mark R. 1984. The State of the Art in Long-Term Care Insurance. In *Long-Term Care Financing and Delivery Systems: Exploring Some Alternatives*, ed. Patrice Feinstein, Marian Gornick, and Jay Greenberg. Washington, DC: Health Care Financing Administration.

Meiners, Mark R., Phyllis Thorburn, Pamela C. Roddy, and Brenda J. Jones. 1986. *Nursing Home Admissions: The Results of an Incentive Reimbursement Experiment*. Washington, DC: National Center for Health Services Research.

Mendelson, M. 1974. *Tender Loving Greed*. New York: Knopf.

National Association of Insurance Commissioners. 1986. *Long-Term Care: An Industry Perspective on Market Development and Consumer Protection*. Kansas City, MO: NAIC.

Nyman, John A. 1985. Prospective and "Cost-Plus" Medicaid Reimbursement, Excess Medicaid Demand, and the Quality of Nursing Home Care. *Journal of Health Economics* 4: 237–59.

Palmer, Hans C., and Ronald J. Vogel. 1983. Models of the Nursing Home. In *Long-Term Care: Perspectives from Research and Demonstrations*, ed. Ronald J. Vogel and Hans C. Palmer. Washington, DC: Health Care Financing Administration.

Roper, Dorothy Ann. 1986. Nursing and Related Care Homes as Reported from the 1982 National Master Facility Inventory Survey. Data from the National Health Survey Series. Washington, DC: Department of Health and Human Services.

Scanlon, William. 1980. A Theory of the Nursing Home Market. *Inquiry* 17 (1): 25–41.

Stassen, Margaret, and Christine E. Bishop. 1983. Incorporating Case Mix in Prospective Reimbursement for Skilled Nursing Facility Care Under Medicare: Critical Review of Relevant Issues. Background Report to the Health Care Financing Administration. Waltham, MA: Brandeis University, Center for Health Policy Analysis and Research.

Strahan, Genevieve. 1987. Nursing Home Characteristics: Preliminary Data from the 1985 National Nursing Home Survey. National Center for Health Statistics, *Advance Data* Number 131. Washington, DC: U.S. Government Printing Office.

Swan, James H., and Charlene Harrington. 1986. Estimating Undersupply of Nursing Home Beds in States. *Health Services Research* 21 (1): 57–83.

Thorburn, Phyllis, and Mark R. Meiners. 1986. *Nursing Home Patient Outcomes: The Results of an Incentive Reimbursement Experiment*. Washington, DC: National Center for Health Services Research.

Ullman, Steven G. 1987. Ownership, Regulation, Quality Assessment, and Performance in the Long-Term Health Care Industry. *The Gerontologist* 27 (2): 233–39.

Van Nostrand, Joan F., Aurora Zappolo, Esther Hing, Barbara Bloom, Bennet Hirsch, and Daniel J. Foley. 1979. *The National Nursing Home Survey: 1977 Summary for the United States*. Washington, DC: Department of Health, Education and Welfare.

Vladeck, Bruce C. 1980. *Unloving Care: The Nursing Home Tragedy*. New York: Basic Books.

Wallack, Stanley, and Eileen J. Tell. 1986. New Approaches to the Finance and Delivery of Health Care to the Elderly. In *Health Care Cost Management 1986*, ed. M. E. Brennan. Brookfield, WI: International Foundation for Employee Benefit Plans.

Willemain, Thomas R. 1983. Survey-Based Indices for Nursing Home Quality Incentive Reimbursement. *Health Care Financing Review* 4 (3): 83–90.

Winkelvoss, Howard E., and Alwyn V. Powell. 1984. *Continuing Care Retirement Communities: An Empirical, Financial, and Legal Analysis*. Homewood, IL: Richard D. Irwin.

Afterword

Lawrence D. Brown

The rise and growth of competition is surely one of the most significant developments in the health care sector in the last decade. The papers in this special volume, which are all the more valuable for combining retrospective and prospective views, help chart and explain this important change. In some respects, however, the meanings, workings, and consequences of competition remain mysterious. Perhaps a skeptical observer and occasional participant in debates about competition may be permitted a closing word about four additional papers that one would like to have seen accompany those presented here.

First, it is striking that ten years after the publication of the Federal Trade Commission study and fifteen years after the first flush of enthusiasm in Washington for a competitive approach, there still seems to be little agreement on what we *mean* by "competition" or a "market approach" to containing health costs. In the present volume, as in most discussions on the topic, these terms have at least three different meanings. The first meaning, which emphasizes individual cost sharing, is that the prerequisites of competition are in place and the erosion of the market is arrested or reversed insofar as individual consumers must ponder their own willingness to pay before using services. A second meaning of competition is that organizations make efforts to win the allegiance of consumers by selling different product mixes—that is, HMOs, PPOs, and traditional insurers "compete" by marketing diverse blends of quality, access, and cost. A third meaning is that organizations vie for subscribers within carefully drawn rules of the game—rules that may (or should) constrain benefit levels, premium setting, enrollment practices, and more. Two reasons why it has been difficult to sell policymakers on a broad, procompetitive approach are the clear presence of these diverging denotations and uncertainty as to whether and how they can be made consistent. I wish we could have provided a paper addressing these questions: Is there a central core of meaning—much less a unified theory—of competition in health services? If so, what is it? If not, what do these various and somewhat inconsistent meanings imply for competitive policy strategists and the political prospects of achieving them?

Second, strange to say, we seem to know little more about the *workings* of competition than we knew ten years ago. In many ways it remains an institutional "black box." In the real world—the world of complex formal organizations with traditions, ideologies, structures, constituencies, and environmental constraints as well as competitors—what does competitive behavior mean concretely and what practical meanings would it have to assume if competition were to work?

To answer that question, one might begin by picturing a benefits manager in a medium-sized firm in a medium-sized city newly "enjoying" competition among a dozen-odd alternative delivery systems, each seeking discounts from providers and new business by offering discounts to purchasers. In theory, our benefits manager presides over a buyer's market; in practice, he faces several troubling institutional questions. What reception will the firm's employees, who are perhaps long accustomed to Blue Cross or another traditional plan, give to his efforts to enroll them in an alternative plan? Not all the competitors can survive over time; what if he chooses one that fails? Or suppose he picks one that survives but then treats consolidation as an invitation to raise premiums—what bargaining leverage will he then have? Can he credibly threaten to take his business elsewhere? How often will employees tolerate switching plans? How seriously will the plan(s) take his threats to switch? How venturesome will his CEO—and perhaps his workers' unions—allow him to be, and how often? What are the consequences to him (and to the employees) of unforeseen problems? Such questions define the real world of competition—a world of organizational constraints and stakes. A paper mapping this terrain would have enhanced those offered here.

Third, all the authors here agree that since 1978 we have made substantial progress toward enhancing competition (however one defines it and however it works), but remarkably, none shows—or even contends—that this progress has saved the system money. It is astonishing that ten years after the FTC conference we know little about the *outcomes* of increased competition. I would have liked to see a paper on why this nearly complete lack of documented progress toward cost containment should persist. Perhaps the answer has something to do with my first point about definitions. Are we embracing in the name of competition and market forces a cost-sharing ("willingness to pay") strategy that does not control big-ticket items or provider prices? Are organizations that compete for business unable or unwilling to push premiums and prices down and hold them down? Do we need Enthoven's consumer choice health plan, or some variant of it, to impose structure and discipline before competition can "work"? Despite substantial changes in the processes of the system, the increasingly common image of outcomes is the squeezed balloon. Perhaps the real issue is not competition after all, but rather the fragmentation of financing. Perhaps the real solution is not enlarged competition (which aggravates that fragmentation) but rather firm, comprehensive budgetary controls, for which one looks not to the market but to government.

Fourth, in several of the papers—in particular, those of Newhouse, Goldberg and Greenberg, and Altman and Rodwin—one finds the theme that the real cost issue is *technology*. One wonders what might be different today if the FTC conferees had said that ten years ago, if instead of arguing for expanded competition they had articulated the case for firm controls on technology. These controls may take several forms: restrictions on the introduction of technology (technology assessment, randomized controlled trials, and so on), on its diffusion (planning,

certificate of need, capital caps), on its application (criteria for organ transplants and other such "rationing" measures), or on conditions for withholding it (the right to die, infant care review committees, and the like). If these raise the real issues, then our ten-year-plus debate about the choice between competition and regulation may have been a lengthy and costly detour. None of the major questions about technology can be settled by competition; they all demand substantial measures of regulation and extensive negotiation among interested parties. Nor is it clear that competition can contribute much to solving two other problems that are likely to preoccupy policymakers in the 1990s: it only serves to aggravate the problems of the medically indigent, and it is of doubtful help with the problems of long-term care (although Bishop's paper here makes a strong case to the contrary). I would have liked to see a piece on the fit—actual or potential—between competition and the basic causes of the problem of rising health care costs. Maybe next decade.

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